Postel, J.

Network Working Group
Request for Comments: 1000

J. Reynolds
J. Postel
ISI
August 1987

Obsoletes: RFCs 084, 100, 160, 170, 200, 598, 699, 800, 899, 999

THE REQUEST FOR COMMENTS REFERENCE GUIDE

STATUS OF THIS MEMO

This RFC is a reference guide for the Internet community which summarizes of all the Request for Comments issued between April 1969 and March 1987. This guide also categorizes the RFCs by topic.

INTRODUCTION

This RFC Reference Guide is intended to provide a historical account by categorizing and summarizing of the Request for Comments numbers 1 through 999 issued between the years 1969-1987. These documents have been crossed referenced to indicate which RFCs are current, obsolete, or revised. Distribution of this memo is unlimited.

THE ORIGINS OF RFCS - by Stephen D. Crocker

The DDN community now includes hundreds of nodes and thousands of users, but once it was all a gleam in Larry Roberts' eye. While much of the development proceeded according to a grand plan, the design of the protocols and the creation of the RFCs was largely accidental.

The procurement of the ARPANET was initiated in the summer of 1968 -- Remember Vietnam, flower children, etc? There had been prior experiments at various ARPA sites to link together computer systems, but this was the first version to explore packet-switching on a grand scale. ("ARPA" didn't become "DARPA" until 1972.) Unlike most of the ARPA/IPTO procurements of the day, this was a competitive procurement. The contract called for four IMPs to be delivered to UCLA, SRI, UCSB and The University of Utah. These sites were running a Sigma 7 with the SEX operating system, an SDS 940 with the Genie operating system, an IBM 360/75 with OS/MVT (or perhaps OS/MFT), and a DEC PDP-10 with the Tenex operating system. Options existed for additional nodes if the first experiments were successful. BBN won the procurement in December 1968, but that gets ahead of this story.

Part of the reason for selecting these four sites was these were existing ARPA computer science research contractors. The precise usage of the ARPANET was not spelled out in advance, and the research community could be counted on to take some initiative. To stimulate this process, a meeting was called during the summer with representatives from the selected sites, chaired by Elmer Shapiro

from SRI. If memory serves me correctly, Jeff Rulifson came from SRI, Ron Stoughton from UCSB, Steve Carr from Utah and I came from UCLA. (Apologies to anyone I've left out; records are inaccessible or lost at this point.) At this point we knew only that the network was coming, but the precise details weren't known.

That first meeting was seminal. We had lots of questions -- how IMPs and hosts would be connected, what hosts would say to each other, and what applications would be supported. No one had any answers, but the prospects seemed exciting. We found ourselves imagining all kinds of possibilities -- interactive graphics, cooperating processes, automatic data base query, electronic mail -- but no one knew where to begin. We weren't sure whether there was really room to think hard about these problems; surely someone from the east would be along by and by to bring the word. But we did come to one conclusion: We ought to meet again. Over the next several months, we managed to parlay that idea into a series of exchange meetings at each of our sites, thereby setting the most important precedent in protocol design.

The first few meetings were quite tenuous. We had no official charter. Most of us were graduate students and we expected that a professional crew would show up eventually to take over the problems we were dealing with. Without clear definition of what the host-IMP interface would look like, or even what functions the IMP would provide, we focused on exotic ideas. We envisioned the possibility of application specific protocols, with code downloaded to user sites, and we took a crack at designing a language to support this. The first version was known as DEL, for "Decode-Encode Language" and a later version was called NIL, for "Network Interchange Language." When the IMP contract was finally let and BBN provided some definite information on the host-IMP interface, all attention shifted to low-level matters and the ambitious ideas for automatic downloading of code evaporated. It was several years before ideas like remote procedure calls and typed objects reappeared.

In February of 1969 we met for the first time with BBN. I don't think any of us were prepared for that meeting. The BBN folks, led by Frank Heart, Bob Kahn, Severo Ornstein and Will Crowther, found themselves talking to a crew of graduate students they hadn't anticipated. And we found ourselves talking to people whose first concern was how to get bits to flow quickly and reliably but hadn't -- of course -- spent any time considering the thirty or forty layers of protocol above the link level. And while BBN didn't take over the protocol design process, we kept expecting that an official protocol design team would announce itself.

A month later, after a particularly delightful meeting in Utah, it became clear to us that we had better start writing down our

discussions. We had accumulated a few notes on the design of DEL and other matters, and we decided to put them together in a set of notes. I remember having great fear that we would offend whomever the official protocol designers were, and I spent a sleepless night composing humble words for our notes. The basic ground rules were that anyone could say anything and that nothing was official. And to emphasize the point, I labeled the notes "Request for Comments." I never dreamed these notes would distributed through the very medium we were discussing in these notes. Talk about Sorcerer's Apprentice!

Over the spring and summer of 1969 we grappled with the detailed problems of protocol design. Although we had a vision of the vast potential for intercomputer communication, designing usable protocols was another matter. A custom hardware interface and custom intrusion into the operating system was going to be required for anything we designed, and we anticipated serious difficulty at each of the sites. We looked for existing abstractions to use. It would have been convenient if we could have made the network simply look like a tape drive to each host, but we knew that wouldn't do.

It was clear we needed to support remote login for interactive use -- later known as Telnet -- and we needed to move files from machine to machine. We also knew that we needed a more fundamental point of view for building a larger array of protocols. Unfortunately, operating systems of that era tended to view themselves as the center of the universe; symmetric cooperation did not fit into the concepts currently available within these operating systems. And time was pressing: The first IMP was due to be delivered to UCLA September 1, 1969, and the rest were scheduled at monthly intervals.

At UCLA we scrambled to build a host-IMP interface. SDS, the builder of the Sigma 7, wanted many months and many dollars to do the job. Mike Wingfield, another grad student at UCLA, stepped in and offered to get interface built in six weeks for a few thousand dollars. He had a gorgeous, fully instrumented interface working in five and one half weeks. I was in charge of the software, and we were naturally running a bit late. September 1 was Labor Day, so I knew I had a couple of extra days to debug the software. Moreover, I had heard BBN was having some timing troubles with the software, so I had some hope they'd miss the ship date. And I figured that first some Honeywell people would install the hardware -- IMPs were built out of Honeywell 516s in those days -- and then BBN people would come in a few days later to shake down the software. An easy couple of weeks of grace.

BBN fixed their timing trouble, air shipped the IMP, and it arrived on our loading dock on Saturday, August 30. They arrived with the IMP, wheeled it into our computer room, plugged it in and the

software restarted from where it had been when the plug was pulled in Cambridge. Still Saturday, August 30. Panic time at UCLA.

The second IMP was delivered to SRI at the beginning of October, and ARPA's interest was intense. Larry Roberts and Barry Wessler came by for a visit on November 21, and we actually managed to demonstrate a Telnet-like connection to SRI.

With the pressure to get something working and the general confusion as to how to achieve the high generality we all aspired to, we punted and defined the first set of protocols to include only Telnet and FTP functions. In particular, only asymmetric, user-server relationships were supported. In December 1969, we met with Larry Roberts in Utah, and suffered our first direct experience with "redirection". Larry made it abundantly clear that our first step was not big enough, and we went back to the drawing board. Over the next few months we designed a symmetric host-host protocol, and we defined an abstract implementation of the protocol known as the Network Control Program. ("NCP" later came to be used as the name for the protocol, but it originally meant the program within the operating system that managed connections. The protocol itself was known blandly only as the host-host protocol.) Along with the basic host-host protocol, we also envisioned a hierarchy of protocols, with Telnet, FTP and some splinter protocols as the first examples. If we had only consulted the ancient mystics, we would have seen immediately that seven layers were required.

The initial experiment had been declared an immediate success and the network continued to grow. More and more people started coming to meetings, and the Network Working Group began to take shape. Working Group meetings started to have 50 and 100 people in attendance instead of the half dozen we had had in 1968 and early 1969. We held one meeting in conjunction with the Spring Joint Computer Conference in Atlantic City in 1971. In October 1971 we all convened at MIT for a major protocol "fly-off". Representatives from each site were on hand, and everyone tried to log in to everyone else's site. With the exception of one site that was completely down, the matrix was almost completely filled in, and we had reached a major milestone in connectivity.

The rapid growth of the network and the working group also led to a large pile of RFCs. When the 100th RFC was in sight, Peggy Karp took on the task of indexing them. That seemed like a large task then, and we could have hardly anticipated seeing more than a 1000 RFCs several years later.

Where will it end? The network has the exceeded all estimates of its growth. It has been transformed, extended, cloned, renamed and reimplemented. I doubt if there is a single computer still on the

network that was on it in 1971. But the RFCs march on. Maybe I'll write a few words for RFC 10,000.

REQUEST FOR COMMENTS BY CATEGORIES

The RFCs are categorized into several broad groups and within these groups are subdivided by topic. For example, the RFCs relating to file transfer are in 5 (Applications) c (File Transfer).

1. Administrative

1a. Assigned Numbers RFCs

997, 990, 960, 943, 923, 900, 870, 820, 790, 776, 770, 762, 758, 755, 750, 739, 717, 604, 503, 433, 349, 322, 317, 204, 179, 175, 167.

1b. Official Protocols RFCs

991, 961, 944, 924, 901, 880, 840, 694, 661, 617, 582, 580, 552.
774 - Internet Protocol Handbook Table of Contents

1c. Meeting Notes and Minutes

898 - Gateway Special Interest Group Meeting Notes
808, 805, 469 - Computer Mail Meeting Notes
910, 807 - Multimedia Mail Meeting Notes
585 - ARPANET Users Interest Working Group Meeting
549, 396, 282, 253 - Graphics Meeting Notes
371 - International Computer Communications Conference
327 - Data and File Transfer Workshop Notes
316 - Data Management Working Group Meeting Report
164, 131, 116, 108, 101, 082, 077, 066, 063, 037, 021 - Network Working Group Meeting

1d. Meeting Announcements and Group Overviews

828 - Data Communications: IFIP's International "Network" of Experts
631 - Call for Papers: International Meeting on Minicomputers and Data Communication
584 - Charter for ARPANET Users Interest Working Group
537 - Announcement of NGG Meeting
526 - Technical Meeting - Digital Image Processing Software Systems
504 - Workshop Announcement
483 - Cancellation of the Resource Notebook Framework Meeting
474, 314, 246, 232, 134 - Network Graphics Working Group

471 - Announcement of a (Tentative) Workshop on Multi-Site Executive Programs
461 - Telnet Meeting Announcement
457 - TIPUG
456 - Memorandum
454 - File Transfer Protocol Meeting Announcement
453 - Meeting Announcement to Discuss a Network Mail System
374 - IMP System Announcement
359 - The Status of the Release of the New IMP System (2600)
343, 331 - IMP System Change Notification
324 - RJE Protocol Meeting
323 - Formation of Network Measurement Group (NMG)
320 - Workshop on Hard Copy Line Graphics
309 - Data and File Transfer Workshop Announcement
299 - Information Management System
295 - Report of the Protocol Workshop
291, 188, 173 - Data Management Meetings
245, 234, 207, 188, 173, 140, 116, 099, 087, 085, 075, 043, 035 - Network Working Group Meetings
222 - System Programmer's Workshop
212 - NWG Meeting on Network Usage
157 - Invitation to the Second Symposium on Problems in the Optimization of Data Communication Systems
149 - The Best Laid Plans...
147 - The Definition of a Socket
111 - Pressure from the Chairman
048 - A Possible Protocol Plateau
046 - ARPA Network Protocol Notes

1e. Distribution List

402, 363, 329, 303, 300, 211, 168, 155 - ARPA Network Mailing Lists
069 - Distribution List Change for MIT
052 - Updated Distribution List

1f. Policies

980 - Protocol Document Order Form
952, 810, 608 - Host Table Specification
945 - A DoD Statement on the NRC Report
902 - ARPA-Internet Protocol Policy
849 - Suggestions for Improved Host Table Distribution
678 - Document Formats
602 - The Stockings Were Hung by the Chimney With Care
115 - Some Network Information Center Policies on Handling Documents
053 - An Official Protocol Mechanism

1g. Request for Comments Administrative

999, 899, 800, 699 - Requests for Comments Summary
825 - Request for Comments on Requests for Comments
629 - Scenario for Using the Network Journal
628 - Status of RFC Numbers and a Note on Pre-assigned Journal Numbers
598, 200, 170, 160, 100, 084 - RFC Index

1h. Bibliographies

829 - Packet Satellite Technology Reference Sources
290 - Computer Network and Data Sharing: A Bibliography
243 - Network and Data Sharing Bibliography

1i. Other

637 - Change of Network Address for SU-DSL
634 - Change in Network Address for Haskins Lab
616 - Latest Network Maps
609 - Statement of Upcoming Move of NIC/NLS Service
590 - MULTICS Address Change
588 - London Node is Now Up
551 - NYU, ANL, and LBL Joining the Net
544 - Locating On-Line Documentation at SRI-ARC
543 - Network Journal Submission and Delivery
518 - ARPANET Accounts
511 - Enterprise Phone Service to NIC From ARPANET Sites
510 - Request for Network Mailbox Addresses
432 - Network Logical Map
423, 389 - UCLA Campus Computing Network Liaison Staff for APRA Network
421 - A Software Consulting Service for Network Users
419 - MIT-DMS on Vacation
416 - The ARC System will be Unavailable for Use During Thanksgiving Week
405 - Correction to RFC 404
404 - Host Address Changes Involving Rand and ISI
403 - Desirability of a Network 1108 Service
386 - Letter to TIP Users - 2
384 - Official Site IDENTS for Organizations in the ARPA Networks
381 - Three Aids to Improved Network Operation
356 - ARPA Network Control Center
334 - Network Use on May 8
305 - Unknown Host Numbers
301 - BBN IMP No. 5 and NCC Schedule for March 4, 1972
276 - NIC Course
249 - Coordination of Equipment and Supplies Purchase

223 - Network Information Center Schedule for Network Users
185 - NIC Distribution of Manuals and Handbooks
154 - Exposition Style
136 - Host Accounting and Administrative Procedures
118 - Information Required for Each Service Available to the Network
095 - Distribution of NWG/RFC's Through the NIC
016 - MIT

2. ARPANET Host to Host Protocol

2a. Network Control Protocol

801 - NCP/TCP Transition Plan
773 - Comments on NCP/TCP Mail Service Transition Strategy
714 - A Host/Host Protocol for an ARPANET-type Network
689 - Tenex NCP Finite State Machine for Connections
663 - A Lost Message Detection and Recovery Protocol
636 - TIP/TENEX Reliability Improvements
635 - An Assessment of ARPANET Protocols
534, 516, 512 - Lost Message Detection
492, 467 - Proposed Change to Host-Host Protocol Resynchronization of Connection Status
489 - Comment on Resynchronization of Connection Status Proposal
425 - "But my NCP Costs $500 a day..."
210 - Improvement of Flow Control
197 - Initial Connection Protocol - Revised
176 - Comments on Byte Size for Connections
165 - A Proferred Official Initial Connection Protocol
147 - The Definition of a Socket
142 - Time-out Mechanism in the Host-Host Protocol
132, 124, 107, 102 - Output of the Host-Host Protocol Glitch Cleaning Committee
129 - A Request for Comments on Socket Name Structure
128 - Bytes
117 - Some Comments on the Official Protocol
072 - Proposed Moratorium on Changes to Network Protocol
068 - Comments on Memory Allocation Control Commands (CEASE, ALL, GVB, RET) and RFNM
065 - Comments on Host-Host Protocol Document Number 1
060 - A Simplified NCP Protocol
059 - Flow Control-Fixed Versus Demand Allocation
058 - Logical Message Synchronization
057, 054 - An Official Protocol Proffering
056 - Third Level Protocol
055 - A Prototypical Implementation of the NCP
050, 049, 048, 047, 046, 045, 044, 040, 039, 038, 036, 033 - New Host-Host Protocol

042 - Message Data Types
023 - Transmission of Multiple Control Messages
022 - Host-Host Control Message Formats
018 - Comments Re: Host-Host control link
015 - Network Subsystem for Time Sharing Hosts
011 - Implementation of the Host-Host Software Procedures in GORDO
009, 001 - Host Software
008 - ARPA Network Functional Specifications
005 - DEL
002 - Links

2b. Initial Connection Protocol

202 - Possible Deadlock in ICP
197 - Initial Connection Protocol - Revised
161 - A Solution to the Race Condition in the ICP
151, 148, 143, 127, 123 - A Proferred Official ICP
150 - The Use of IPC Facilities
145 - Initial Connection Protocol Control Commands
093 - Initial Connection Protocol
080 - Protocol and Data Formats
066 - 3rd Level Ideas and Other Noise

3. Internet Level

3a. Internet Protocol

815 - IP Datagram Reassembly Algorithms
791, 760 - Internet Protocol (IP)
781 - A Specification of the Internet Protocol IP Timestamp Option

3b. Internet Control Message Protocol

792, 777 - Internet Control Message Protocol (ICMP)

3c. Gateway Protocols

985 - Requirements for Internet Gateways
975 - Autonomous Confederations
970 - On Packet Switches With Infinite Storage
911 - EGP Gateway under Berkeley Unix
904, 890, 888, 827 - Exterior Gateway Protocol
875 - Gateways, Architectures, and Heffalumps
823 - Gateway Gateway Protocol

3d. Other

986 - Working Draft - Guidelines for the Use of Internet-IP Addressing in the ISO Connectionless-Mode Network
981 - An Experimental Multiple-Path Routing Algorithm
963 - Some Problems with the Specification of the Military Standard Internet Protocol
950 - Internet Standard Subnetting Procedure
947 - Multi-Network Broadcasting Within the Internet
940, 917, 925, 932, 936, 922 - Internet Subnets Protocol
925, 917, 826 - Multi-LAN Address Resolution Protocol
919, 922 - Broadcasting Internet Datagrams
891 - DCN Local-Network Protocols
871 - A Perspective on the ARPANET Reference Model
831 - Backup Access to the European Side of SATNET
817 - Modularity and Efficiency in Protocol Implementation
816 - Fault Isolation and Recovery
814 - Name, Addresses, Ports, and Routes
796 - Address Mapping
795 - Service Mappings
730 - Extensible Field Addressing

4. Host Level

4a. User Datagram Protocol

768 - User Datagram Protocol

4b. Transmission Control Protocol

983 - ISO Transport Services on Top of the TCP
964 - Some Problems with the Specification of the Military Standard Transmission Control Protocol
896 - Congestion Control in IP/TCP Internetworks
889 - Internet Delay Experiments
879 - The TCP Maximum Segment Size and Related Topics
872 - TCP-ON-A-LAN
817 - Modularity and Efficiency in Protocol Implementation
816 - Fault Isolation and Recovery
814 - Name, Addresses, Ports, and Routes
794 - Pre-Emption
793, 761, 675 - Transmission Control Protocol
721 - Out of Band Control Signals in a Host to Host Protocol
700 - A Protocol Experiment

4c. Transaction Protocols and Distributed Operating Systems

955 - Towards a Transport Service for Transaction Processing Applications

938 - Internet Reliable Transaction Protocol Functional and Interface Specification
908 - Reliable Data Protocol
722 - Thoughts on Interactions in Distributed Services
713 - MSDTP -- Message Services Data Transmission Protocol
712 - A Distributed Capability Computing System DCCS
708 - Elements of a Distributed Programming System
707 - A High-Level Framework for Network-Based Resource Sharing
684 - A Commentary on Procedure Calling as A Network Protocol
677 - The Maintenance of Duplicate Databases
674 - Procedure Call Documents--Version 2
672 - A Multi-Site Data Collection Facility
671 - A Note on Reconnection Protocol
645 - Network Standard Data Specification Syntax
615 - Proposed Network Standard Data Pathname Syntax
610 - Further Datalanguage Design Concepts
592 - Some Thoughts on System Design to Facilitate Resource Sharing
578 - Using MIT-MATHLAB MACSYMA From MIT-DMS Muddle - An Experiment in Automated Resource Sharing
515 - Specifications for Datalanguage, Version 0/9
500 - The Integration of Data Management Systems on a Computer Network
441 - Inter-Entity Communication - An Experiment
437 - Data Reconfiguration Service at UCSB
203 - Achieving Reliable Communication
076 - Connection-by-Name: User-Oriented Protocol
062 - A System for Interprocess Communication in a Resource Sharing Computer Network
061 - A Note on Interprocess Communication in a Resource Sharing Computer Network
051 - Proposal for a Network Interchange Language
031 - Binary Message Forms in Computer Networks
005 - DEL
001 - Host Software

4d. Other

998, 969 - NETBLT: A Bulk Data Transfer Protocol
988 - Host Extensions for IP Multicasting
979 - PSN End-to-End Functional Specification
966 - A Multicast Extension to the Internet Protocol
869 - Host Monitoring Protocol
741 - Specifications for the Network Voice Protocol NVP
643 - Cross Net Debugger
162 - NETBUGGER3

5. Application Level

5a. Telnet Protocol

854, 764 - Telnet Protocol Specification
818 - The Remote User Telnet Service
801 - NCP/TCP Transition Plan
782 - A Virtual Terminal Management Model
764 - Telnet Protocol Specification
728 - A Minor Pitfall in the Telnet Protocol
688 - Tentative Schedule for the New Telnet Implementation for the TIP
681 - Network Unix
600 - Interfacing an Illinois Plasma Terminal to the ARPANET
596 - Second Thoughts on Telnet Go-Ahead
595 - Some Thoughts in Defense of the Telnet Go-Ahead
593 - Telnet and FTP Implementation Schedule Change
576 - Proposal for Modifying Linking
570 - Experimental Input Mapping Between NVT ASCII and UCSB Online System
562 - Modifications to the Telnet Specification
559 - Comments on the New Telnet Protocol and Its Implementation
529 - A Note on Protocol Synch Sequences
513 - Comments on the New Telnet Specifications
495 - Telnet Protocol Specification
466 - Telnet Logger/Server for Host LL-67
461 - Telnet Meeting Announcement
452 - Telnet Command at Host LL
435 - Telnet Issues
426 - Reconnection Protocol
393 - Comments on Telnet Protocol Changes
377 - Using TSO Via ARPA Network Virtual Terminal
357 - An Echoing Strategy for Satellite Links
355, 346 - Satellite Considerations
340 - Proposed Telnet Changes
339 - MLTNET - A "Multi-Telnet" Subsystem for TENEX
328 - Suggested Telnet Protocol Changes
318 - Ad Hoc Telnet Protocol
216 - Telnet Access to UCSB's On-Line System
215 - NCP, ICP, and Telnet: The Terminal IMP Implementation
206 - A User Telnet Description of an Initial Implementation
205 - NETCRT - A Character Display Protocol
190 - DEC PDP-10 - IMLAC Communication System
158 - Proposed Telnet Protocol
139 - Discussion of Telnet Protocol
137 - Telnet Protocol - A Proposed Document
135, 110 - Conventions for Using an IBM 2741 Terminal as a User Console for Access to Network Server Hosts

103 - Implementation of Interrupt Keys
097 - A First Cut at a Proposed Telnet Protocol
091 - A Proposed User-User Protocol
015 - Network Subsystem for Time Sharing Hosts

5b. Telnet Options

946 - Telnet Terminal Location Number Option
933 - Output Marking Telnet Option
930 - Telnet Terminal Type Option
927 - TACACS User Identification Telnet Option
885 - Telnet End of Record Option
884 - Telnet Terminal Type Option
861 - Telnet Extended Options - List Option
860 - Telnet Timing Mark Option
859 - Telnet Status Option
858 - Telnet Suppress Go Ahead Option
857 - Telnet Echo Option
856 - Telnet Binary Transmission
855 - Telnet Option Specifications
854 - Telnet Protocol Specifications
779 - Telnet Send-Location Option
749 - Telnet SUPDUP-OUTPUT Option
748 - Telnet Randomly-Lose Option
736 - Telnet SUPDUP Option
735 - Revised Telnet Byte Macro Option
734 - SUPDUP Protocol
747 - Recent Extensions to the SUPDUP Protocol
746 - The SUPDUP Graphics Extension
732 - Telnet Data Entry Terminal Option
731 - Telnet Data Entry Terminal Option
729 - Telnet Byte Macro Option
727 - Telnet Logout Option
726 - Remote Controlled Transmission and Echoing Telnet Option
719 - Discussion on RCTE
718 - Comments on RCTE from the Tenex Implementation Experience
703, 702, 701 - Survey of New-Protocol Telnet Servers
698 - Telnet Extended ASCII Option
679 - February, 1975, Survey of New-Protocol Telnet Servers
669 - November 1974, Survey of New-Protocol Telnet Servers
659 - Announcing Additional Telnet Options
658 - Telnet Output Line Feed Disposition
657 - Telnet Output Vertical Tab Disposition Option
656 - Telnet Output Vertical Tab Stops Option
655 - Telnet Output Form Feed Disposition Option
654 - Telnet Output Horizontal Tab Disposition Option
653 - Telnet Output Horizontal Tab Stops Option
652 - Telnet Output Carriage Return Disposition Option
651 - Revised Telnet Status Option

587 - Announcing New Telnet Options
581 - Corrections to RFC 560 - Remote Controlled Transmission and Echoing Telnet Option
563 - Comments on the RCTE Telnet Option
560 - Remote Controlled Transmission and Echoing Telnet Option

5c. File Transfer Protocol

987 - Mapping Between X.400 and RFC 822
959, 542, 354, 265, 172, 114 - The File Transfer Protocol
949 - FTP Unique-Named Store Command
913 - Simple File Transfer Protocol
906 - Bootstrap Loading Using TFTP
822 - Standard for the Format of ARPA Internet Text Messages
821, 788 - Simple Mail Transfer Protocol
783, 768, 764 - The TFTP Protocol Revision 2
775 - Directory Oriented FTP Commands
743 - FTP Extension: XRSQ/XRCP
737 - FTP Extension: XSEN
697 - CWD Command of FTP
691 - One More Try on the FTP
686 - Leaving Well Enough Alone
683 - FTPSRV -- Tenex Extension for Paged Files
678 - Document File Format Standards
662 - Performance Improvement in ARPANET File Transfers from Multics
640 - Revised FTP Reply Codes
630 - FTP Error Code Usage for More Reliable Mail Service
624 - Comments on the File Transfer Protocol
614 - Response to RFC 607 - Comments on the FTP
607 - NIC-21255 Comments on the File Transfer Protocol
573 - Data and File Transfer - Some Measurement Results
571 - Tenex FTP Problem
535 - Comments on File Access Protocol
532 - The UCSD-CC Server-FTP Facility
520 - Memo to FTP Group (Proposal for File Access Protocol)
506 - An FTP Command Naming Problem
505 - Two Solutions to a File Transfer Access Problem
501 - Un-Muddling "Free File Transfer"
487 - Host-Dependent FTP Parameters
486 - Data Transfer Revisited
480 - Host-Dependent FTP Parameters
479 - Use of FTP by the NIC Journal
478 - FTP Server-Server Interaction - II
475 - FTP and the Network Mail System
468 - FTP Data Compression
463 - FTP Comments and Response to RFC 430
458 - Mail Retrieval via FTP

454 - File Transfer Protocol - Meeting Announcement and a New Proposed Document
448 - Print Files in FTP
438 - FTP Server-Server Interaction
430 - Comments on File Transfer Protocol
418 - Server File Transfer Under TSS/360 at NASA/Ames Research Center
414 - File Transfer Protocols (FTP): Status and Further Comments
412 - User FTP Documentation
385 - Comments on the File Transfer Protocol (RFC 354)
310 - Another Look at Data and File Transfer Protocols
294 - The Use of "Set Data Type" Transaction in the File Transfer Protocol
281 - A Suggested Addition to File Transfer Protocol
269 - Some Experience with File Transfer
264, 171 - The Data Transfer Protocol
250 - Some Thoughts on File Transfer
242 - Data Descriptive Language for Shared Data
238 - Comments on DTP and FTP Protocols
163 - Data Transfer Protocols
141 - Comments on RFC 114 (A File Transfer Protocol)
133 - File Transfer and Error Recovery

5d. Domain Name System

974 - Mail Routing and the Domain System
973 - Domain System Changes and Observations
953, 811, 810 - HOSTNAME Protocol
921, 897 - Domain Name System Implementation Schedule
920 - Domain Requirements
883 - Domain Names - Implementation and Specification
882 - Domain Names - Concepts and Facilities
881 - The Domain Names Plan and Schedule
830 - A Distributed System for Internet Name Service
819 - The Domain Naming Convention for Internet User Applications
799 - Internet Name Domains
756 - The NIC Name Server -- A Datagram-Based Information Utility
752 - A Universal Host Table

5e. Mail and Message Systems

994, 983 - PCMAIL: A Distributed Mail System
977 - Network News Transfer Protocol
976 - UUCP Mail Interchange Format Standard
974 - Mail Routing and the Domain System
934 - Proposed Standard for Message Encapsulation

915 - Network Mail Path Service
886 - Proposed Standard for Message Header Munging
850 - Standard for Interchange of USENET Messages
841 - Specification for Message Format for Computer Based Message Systems
822 - Standard for the Format of ARPA Internet Text Messages
821 - Simple Mail Transfer Protocol
806 - Specification for Message Format for Computer Based Message Systems
780, 772 - Mail Transfer Protocol
786 - Mail Transfer Protocol - ISI TOPS-20 MTP-NIMAIL Interface
785 - Mail Transfer Protocol - ISI TOPS-20 File Definitions
784 - Mail Transfer Protocol - ISI TOPS-20 Implementation
771 - Mail Transition Plan
763 - Role Mailboxes
757 - A Suggested Solution to the Naming, Addressing, and Delivery Problem for ARPANET Message Systems
754 - Out-of-Net Host Addresses for Mail
753 - Internet Message Protocol
751 - Survey of FTP Mail and MLFL
733 - Standard for the Format of ARPA Network Text Messages
724 - Proposed Official Standard for the Format of ARPA Network Messages
720 - Address Specification Syntax for Network Mail
706 - On the Junk Mail Problem
680 - Message Transmission Protocol
644 - On the Problem of Signature Authentication for Network Mail
577 - Mail Priority
574 - Announcement of a Mail Facility at UCSB
561 - Standardizing Network Mail Headers
555 - Responses to Critiques of the Proposed Mail Protocol
539, 524 - A Proposed Mail Protocol
498 - On Mail Service to CCN
491 - What is "Free"?
475 - On FTP and the Network Mail System
458 - Mail Retrieval via FTP
333 - A Proposed Experiment with a Message Switching Protocol
278, 224, 221, 196 - A Mail Box Protocol

5f. Facsimile and Bitmaps

809 - UCL Facsimile System
804 - Facsimile Formats
803 - Dacom 450/500 Facsimile Date Transcoding
798 - Decoding Facsimile Data From the Rapicom 450
797 - Bitmap Formats
769 - Rapicom 450 Facimile File Format

5g. Graphics

965 - A Format for a Graphical Communication Protocol
553 - Draft Design for a Text/Graphics Protocol
493 - Graphics Protocol
401 - Conversion of NGP-0 Coordinates to Device Specific Coordinates
398 - UCSB Online Graphics
387 - Some Experiences in Implementing Network Graphics Protocol Level 0
351 - Information Form for the ARPANET Graphics Resources Notebook
336 - Level 0 Graphics Input Protocol
296 - DS-1 Display System
292 - Graphics Protocol - Level 0 only
285 - Network Graphics
268 - Graphics Facilities Information
199 - Suggestions for a Network Data-Telnet Graphics Protocol
192 - Some Factors Which a Network Graphics Protocol Must Consider
191 - Graphics Implementation and Conceptualization at ARC
186 - A Network Graphics Loader
184 - Proposed Graphic Display Modes
181, 177 - A Device Independent Graphical Display Description
178 - Network Graphics Attention Handling
125, 086 - Proposal for a Network Standard Format for a Data Stream to Control Graphics Display
094 - Some Thoughts on Network Graphics

5h. Data Management

304 - A Data Management System Proposal for the ARPA Network
195 - Data Computers - Data Descriptions and Access Language
194 - The Data Reconfiguration Service - Compiler/Interpreter Implementation Notes
166 - Data Reconfiguration Service - An Implementation Specification
144 - Data Sharing on Computer Networks
138 - Status Report on Proposed Data Reconfiguration Service
083 - Language-Machine for Data Reconfiguration

5i. Remote Job Entry .

740, 599, 589, 325, 189, 088 - CCN Network Remote Job Entry Program - NETRJS
725 - An RJE Protocol for a Resource Sharing Network
499 - Harvard's Network RJE
490 - Surrogate RJS for UCLA-CCN
477, 436 - Remote Job Service at UCSB

407 - Remote Job Entry
368 - Comments on "Proposed Remote Job Entry Protocol"
360 - Proposed Remote Job Entry Protocol
338 - EBCDIC/ASCII Mapping for Network RJE
307 - Using Network Remote Job Entry
283 - NETRJT - Remote Job Service Protocol for TIPS
105 - Network Specification for Remote Job Entry and Remote Job Output Retrieval at UCSB

5j. Time

958, 957, 956 - Network Time Protocol
868 - Time Server Protocol
867 - Daytime Protocol
778 - DCNET Time Server Protocol
738 - Time Server
685 - Response Time in Cross-network Debugging
034 - Some Brief Preliminary Notes on the ARC Clock
032 - Some Thoughts on SRI's Proposed Real Time Clock
028 - Time Standards

5k. Other

978 - Voice File Interchange Protocol (VFIP)
972 - Password Generator Protocol
954, 812 - Whois Protocol
951 - Bootstrap Protocol
937, 918 - Post Office Protocol
931, 912 - Authentication Service
913 - Simple File Transfer Protocol
909 - Loader Debugger Protocol
891 - DCN Local Net Protocol
887 - Resource Location Protocol
866 - Active Users Protocol
865 - Quote of the Day Protocol
864 - Character Generator Protocol
863, 361, 348 - Discard Protocol
862, 361, 347 - Echo Protocol
821, 822 - Simple Mail Transfer Protocol
783 - Trivial File Transfer Protocol
767 - Document Formats
759 - Internet Message Protocol
742 - Finger Protocol
734 - SUPDUP Protocol
726 - Remote Controlled Transmission and Echoing Telnet Option
666 - Specification of the Unified User-Level Protocol
621 - NIC User Directories at SRI-ARC
569 - Network Standard Text Editor
470 - Change in Socket for TIP News Facility

451 - Tentative Proposal for a Unified User Level Protocol
098, 079 - Logger Protocol
029 - Note in Response to Bill English's Request for Comments

6. Program Documentation

6a. General

496 - A TNLS Quick Reference Card is Available
494 - Availability of MIX and MIXAL in the Network
488 - NLS Classes at Network Sites
485 - MIS and MIXAL at UCSB
431 - Update on SMFS Login and Logout
411 - New Multics Network Software Features
409 - TENEX Interface to UCSB's Simple-Minded File System
399 - SMFS Login and Logout
390 - TSO Scenario Batch Compilation and Foreground Execution
382 - Mathematical Software on the ARPA Network
379 - Using TSO at CCN
373 - Arbitrary Character Sets
350 - User Accounts for UCSB On-Line System
345 - Interest Mixed Integer Programming (MPSX on 360/91 at CCN)
321 - CBI Networking Activity at MITRE
317 - Official Host-Host Protocol Modification: Assigned Link Numbers
311 - New Console Attachments to the UCSB Host
251 - Weather Data
223 - Network Information Center Schedule for Network Users
217 - Specification Changes for OLS, RJE/RJOR, and SMFS
174 - UCLA-Computer Science Graphics Overview
122 - Network Specifications for UCSB's Simple-Minded File System
121 - Network On-Line Operators
120 - Network PL1 Subprograms
119 - Network FORTRAN Subprograms
074 - Specifications for Network Use of the UCSB On-Line System

7. Network Specific

7a. ARPANET

878, 851, 802 - The ARPANET 1822L Host Access Protocol
852 - The ARPANET Short Blocking Feature
789 - Vulnerabilities of Network Control Protocols: An Example
716 - Interim Revision to Appendix F of BBN 1822
704 - IMP/Host and Host/IMP Protocol Change
696 - Comments on the IMP/HOST and HOST/IMP Protocol Changes
695 - Official Change in Host-Host Protocol

692 - Comments on IMP/Host Protocol Changes
690 - Comments on the Proposed Host/IMP Protocol Changes
687 - IMP/Host and Host/IMP Protocol
667 - BBN Host Ports
660 - Some Changes to the IMP and the IMP/Host Interface
642 - Ready Line Philosophy and Implementation
638, 633 - IMP/TIP Preventive Maintenance Schedule
632 - Throughput Degradation for Single Packet Message
627 - ASCII Text File of Hostnames
626 - On a possible Lockup Condition in IMP Subnet due to Message Sequencing
625 - On Line Hostnames Service
623 - Comments on On-line Host Name Service
622 - Scheduling IMP/TIP Down Time
620 - Request for Monitor Host Table Updates
619 - Mean Round-Trip Times in the ARPANET
613 - Network Connectivity: A Response to RFC 603
611 - Two Changes to the IMP/Host Protocol
606 - Host Names On-Line
594 - Speedup of Host-IMP Interface
591 - Addition to the Very Distant Host Specification
568, 567 - Cross-Country Network Bandwidth
548 - Hosts Using the IMP Going Down Message Specification
547 - Change to the Very Distant Host Specification
533 - Message-ID Numbers
534 - Lost Message Detection
528 - Software Checksumming in the IMP and Network Reliability
521 - Restricted Use of IMP DDT
508 - Real-Time Data Transmission on the ARPANET
476, 434 - IMP/TIP Memory Retrofit Schedules
449, 442 - The Current Flow-Control Scheme for IMPSYS
447, 445 - IMP/TIP Preventive Maintenance Schedule
417 - LINK Usage Violation
410 - Removal of the 30-second Delay When Hosts Come Up
406 - Scheduled IMP Software Releases
395 - Switch Settings on IMPs and TIPs
394 - Two Proposed Changes to the IMP-HOST Protocol
369 - Evaluation of ARPANET Services (January through March, 1972)
335 - New Interface-IMP/360
312 - Proposed Change in IMP-to-Host Protocol
297 - TIP Message Buffers
280 - A Draft Set of Host Names
274 - Establishing a Local Guide for Network Usage
271 - IMP System Change Notification
270 - Correction to the BBN Report No. 1822
263 - "Very Distant" Host Interface
254 - Scenarios for Using ARPANET Computers
247 - Proffered Set of Standard Host Names

241 - Connecting Computers to NLC Ports
239 - Host Mnemonics Proposed in RFC 226
237 - The NIC's View of Standard Host Names
236 - Standard Host Names
233 - Standardization of Host Call Letters
230 - Toward Reliable Operation of Minicomputer-based Terminals on a TIP
229 - Standard Host Names
228 - Clarification
226 - Standardization of Host Mnemonics
218 - Changing the IMP Status Reporting
213 - IMP System Change Notification
209 - Host/IMP Interface Documentation
208 - Address Tables
073, 067 - Proposed Change to Host/IMP Spec to Eliminate Marking
071 - Reallocation in Case of Input Error
070 - A Note On Padding
064 - Getting Rid of Marking
041 - IMP/IMP Teletype Communication
025 - No High Link Numbers
019 - Two Protocol Suggestions to Reduce Congestion at Swap-Bound Nodes
017a, 017 - Some Questions Re: HOST-IMP Protocol
012 - IMP-HOST Interface Flow Diagrams
007 - HOST-IMP Interface
006 - Conversation with Bob Kahn

7b. Internet Protocol On Networks

948 - Two Methods for the Transmission of IP Datagrams Over IEEE 802.3 Networks
907 - Host Access Protocol
903 - A Reverse Address Resolution Protocol
895 - A Standard for the Transmission of IP Datagrams over Experimental Ethernet Networks
894 - A Standard for the Transmission of IP Datagrams over Ethernet Networks
893 - Trailer Encapsulations
891 - Internet Protocol on DC Networks
877 - A Standard for the Transmission of IP Datagrams Over Public Data Networks
826 - Address Resolution Protocol
796 - Address Mappings
795 - Service Mappings

7c. Host Front End Protocols

929, 928, 705, 647 - Host-Front End Protocol

7d. Other

935 - Reliable Link Layer Protocols
916 - Reliable Asynchronous Transfer Protocol
914 - Thinwire Protocol
824 - The Cronus Virtual Local Network

8. Measurement

8a. General

573 - Data and File Transfer - Some Measurement Results
557 - Revelations in Network Host Measurements
546 - Tenex Load Averages for July 1973
462 - Responding to User Needs
415 - TENEX Bandwidth
392 - Measurement of Host Costs for Transmitting Network Data
352 - TIP Site Information Form
308 - ARPANET Host Availability Data
286 - Network Library Information System
274 - Establishing a Local Guide for Network Usage
214, 193 - Network Checkout
198 - Site Certification - Lincoln Labs
182 - Compilation of List of Revelant Site Reports
180 - File System Questionnaire
156 - Status of the Illinois Site (Response to RFC 116)
153 - SRI ARC-NIC Status
152 - SRI Artificial Intelligence Status Report
126 - Ames Graphics Facilities at Ames Research Center
112 - User/Server Site Protocol Network HOST Questionnaire
104 - Link 191
106 - USER/SERVER Site Protocol Network Host Questionnaire

8b. Surveys

971 - A Survey of Data Representation Standards
876 - Survey of SMTP Implementations
848 - Who Provides the "Little" TCP Services?
847 - Summary of Smallberg Surveys
844 - Who Talks ICMP, too? Survey of 18 February 1983
846, 845, 843, 842, 839, 838, 837, 836, 835, 834, 833, 832 -
Who Talks TCP?
787 - Connectionless Data Transmission Survey/Tutorial
703, 702, 701, 679, 669 - Survey of New-Protocol Telnet Servers
565 - Storing Network Survey Data at the Datacomputer
545 - Of What Quality be the UCSB Resource Evaluators?
530 - A Report on the SURVEY Project
523 - SURVEY is in Operation Again
519 - Resource Evaluation

514 - Network Make-Work
464 - Resource Notebook Framework
460 - NCP Survey
459 - Network Questionnaire
450 - Multics Sampling Timeout Change
446 - Proposal to Consider a Network Program Resource Notebook
096 - An Interactive Network Experiment to Study Modes of Access to the Network Information Center
090 - CCN as a Network Service Center
081 - Request for Reference Information
078 - NCP Status Report: UCSB/Rand

8c. Statistics

996 - Statistics Server
618 - A Few Observations on NCP Statistics
612, 601, 586, 579, 566, 556, 538, 522, 509, 497, 482, 455, 443, 422, 413, 400, 391, 378 - Traffic Statistics
603, 597, 376, 370, 367, 366, 362, 352, 344, 342, 332, 330, 326, 319, 315, 306, 298, 293, 288, 287, 267, 266 - Network Host Status
550 - NIC NCP Experiment
388 - NCP Statistics
255, 252, 240, 235 - Site Status

9. Network Experience and Demonstrations

9a. General

968 - 'Twas the Night Before Start-up
967 - All Victims Together
573 - Data and File Transfer - Some Measurement Results
527 - ARPAWOCKY
525 - MIT-Mathlab Meets UCSB-OLS
439 - PARRY Encounters the Doctor
420 - CCA ICC Weather Demo
372 - Notes on a Conversation with Bob Kahn on the ICCC
364 - Serving Remote Users on the ARPANET
302 - Excercising the ARPANET
231 - Service Center Standards for Remote Usage - A User's View
227 - Data Transfer Rates (RAND/UCLA)
113 - Network Activity Report: UCSB and Rand
089 - Some Historic Moments in Networking
004 - Network Timetable

10. Site Documentation

10a. General

30, 27, 24, 16, 10, 3 - Documentation Conventions

11. Other Standards

11a. ANSI

570 - Experimental Input Mapping Between NVT ASCII and UCSB Online System
183 - The EBCDIC Codes and Their Mapping to ASCII
020 - ASCII Format for Network Interchange

11b. CCITT

987 - Mapping Between X.400 and RFC 822
874 - A Critique of X.25

11c. NRC

942 - Transport Protocols for Department of Defense Data Networks
939 - Executive Summary of the NRC Report on Transport Protocols for Department of Defense Data Networks

11d. ISO

995 - End System to Intermediate System Routing Exchange Protocol for Use in Conjunction with ISO 8473
994 - Final Text of DIS 8473, Protocol for Providing the Connectionless Mode Network Service
982 - Guidelines for the Specification of the Structure of the Domain Specific Part (DSP) of the ISO Standard NSAP Address
941 - Addendum to the Network Service Definition Covering Network Layer Addressing
926 - Protocol for Providing the Connectionless-Mode Network Services
905 - ISO Transport Protocol Specification (ISO DP 8073)
892 - ISO Transport Protocol
873 - The Illusion of Vendor Support

12. Never Issued

12a. Never Issued

014, 026, 092, 159, 201, 220, 244, 248, 257, 258, 259, 260,
261, 262, 272, 275, 277, 279, 284, 337, 341, 358, 375, 380,
383, 397, 424, 427, 428, 444, 465, 481, 484, 502, 507, 517,
536, 540, 541, 554, 558, 564, 572, 575, 583, 605, 639, 641,
646, 648, 649, 650, 664, 665, 668, 670, 673, 676, 682, 693,
709, 710, 711, 715, 723, 853.

REQUEST FOR COMMENTS LIST WITH ABSTRACTS

RFC	Author	Date	Title
999	Westine	Mar 87	Requests For Comments Summary

A summary of the Request for Comments Documents from RFC 900-999.

RFC	Author	Date	Title
998	Lambert	Mar 87	NETBLT: A Bulk Data Transfer Protocol

This document is a description of and a specification for the NETBLT protocol. It is a revision of the specification published in RFC-969. NETBLT (NETwork BLock Transfer) is a transport level protocol intended for the rapid transfer of a large quantity of data between computers. It provides a transfer that is reliable and flow controlled, and is designed to provide maximum throughput over a wide variety of networks. Although NETBLT currently runs on top of the Internet Protocol (IP), it should be able to operate on top of any datagram protocol similar in function to IP.

This document is published for discussion and comment, and does not constitute a standard. The proposal may change and certain parts of the protocol have not yet been specified; implementation of this document is therefore not advised.

RFC	Author	Date	Title
997	Reynolds	Mar 87	Internet Numbers

This memo is an official status report on the network numbers used in the Internet community. As of 1-Mar-87 the Network Information Center (NIC) at SRI International has assumed responsibility for assignment of Network Numbers and Autonomous System Numbers. This RFC documents the current assignments of these numbers at the time of this transfer of responsibility.

RFC	Author	Date	Title
996	Mills	Feb 87	Statistics Server

This RFC specifies a standard for the ARPA Internet community. Hosts and gateways on the DARPA Internet that choose to implement a remote statistics monitoring facility may use this protocol to send statistics data upon request to a monitoring center or debugging host.

RFC	Author	Date	Title
995	ANSI	Apr 86	End System to Intermediate System Routing Exchange Protocol for use in conjunction with ISO 8473.

This Protocol is one of a set of International Standards produced

to facilitate the interconnection of open systems. The set of standards covers the services and protocols required to achieve such interconnection.

This Protocol is positioned with respect to other related standards by the layers defined in the Reference Model for Open Systems Interconnection (ISO 7498) and by the structure defined in the Internal Organization of the Network Layer (DIS 8648). In particular, it is a protocol of the Network Layer. This Protocol permits End Systems and Intermediate Systems to exchange configuration and routing information to facilitate the operation of the routing and relaying functions of the Network Layer.

994 ANSI Mar 86 Final Text of DIS 8473, Protocol for Providing the Connectionless Mode Network Service

This Protocol Standard is one of a set of International Standards produced to facilitate the interconnection of open systems. The set of standards covers the services and protocols required to achieve such interconnection.

This Protocol Standard is positioned with respect to other related standards by the layers defined in the Reference Model for Open Systems Interconnection (ISO 7498). In particular, it is a protocol of the Network Layer. This Protocol may be used between network-entities in end systems or in Network Layer relay systems (or both). It provides the Connectionless-mode Network Service as defined in Addendum 1 to the Network Service Definition Covering Connectionless-mode Transmission (ISO 8348/AD1).

993 Clark Dec 86 PCMAIL: A Distributed Mail System for Personal Computers

This document is a discussion of the PCMAIL workstation-based distributed mail system. It is a revision of the design published in NIC RFC 984. The revision is based on discussion and comments from a variety of sources, as well as further research into the design of interactive PCMAIL clients and the use of client code on machines other than IBM PCs. As this design may change, implementation of this document is not advised.

992 Birman Nov 86 On Communication Support for Fault-Tolerant Process Groups

This memo describes a collection of multicast communication primitives integrated with a mechanism for handling process failure and recovery. These primitives facilitate the implementation of fault-tolerant process groups, which can be used

to provide distributed services in an environment subject to non-malicious crash failures.

Here, we argue that the form of "best effort" reliability provided by host groups may not address the requirements of those researchers who are building fault tolerant software. Our basic premise is that reliable handling of failures, recoveries, and dynamic process migration are important aspects of programming in distributed environments, and that communication support that provides unpredictable behavior in the presence of such events places an unacceptable burden of complexity on higher level application software. This complexity does not arise when using the fault-tolerant process group alternative.

991 Reynolds Nov 86 Official ARPA-Internet Protocols

This RFC identifies the documents specifying the official protocols used in the Internet. Comments indicate any revisions or changes planned. This memo is an official status report on the numbers used in protocols in the ARPA-Internet community. This memo obsoletes RFCs 961, 944, 924, 901, 880, 840, 694, 661, 617, 582, 580, 552.

990 Reynolds Nov 86 Assigned Numbers

This Network Working Group Request for Comments documents the currently assigned values from several series of numbers used in network protocol implementations. This memo is an official status report on the numbers used in protocols in the ARPA-Internet community. This memo obsoletes RFCs 960, 943, 923, 900, 870, 820, 790, 776, 770, 762, 758, 755, 750, 739, 717, 604, 503, 433, 349, 322, 317, 204, 179, 175, 167.

989 Linn Feb 87 Privacy Enhancement for Internet Electronic Mail: Part I: Message Encipherment and Authentication Procedures

This RFC suggests a proposed protocol for the Internet community and requests discussion and suggestions for improvements. This RFC is the outgrowth of a series of IAB Privacy Task Force meetings and of internal working papers distributed for those meetings. This RFC defines message encipherment and authentication procedures, as the initial phase of an effort to provide privacy enhancement services for electronic mail transfer in the Internet. It is intended that the procedures defined here be compatible with a wide range of key management approaches, including both conventional (symmetric) and public-key (asymmetric) approaches for encryption of data encrypting keys.

Use of conventional cryptography for message text encryption and/or authentication is anticipated.

Privacy enhancement services (confidentiality, authentication, and message integrity assurance) are offered through the use of end-to- end cryptography between originator and recipient User Agent processes, with no special processing requirements imposed on the Message Transfer System at endpoints or at intermediate relay sites. This approach allows privacy enhancement facilities to be incorporated on a site-by-site or user-by-user basis without impact on other Internet entities. Interoperability among heterogeneous components and mail transport facilities is supported.

988 Deering Jul 86 Host Extensions for IP Multicasting

This memo specifies the extensions required of a host implementation of the Internet Protocol (IP) to support internetwork multicasting. This specification supersedes that given in RFC 966, and constitutes a proposed protocol standard for IP multicasting in the ARPA-Internet. The reader is directed to RFC 966 for a discussion of the motivation and rationale behind the multicasting extension specified here.

987 Kille Jun 86 Mapping Between X.400 and RFC 822

The X.400 series of protocols have been defined by CCITT to provide an Interpersonal Messaging Service (IPMS), making use of a store and forward Message Transfer Service. It is expected that this standard will be implemented very widely. This document describes a set of mappings which will enable interworking between systems operating the X.400 protocols and systems using RFC 822 mail protocol or protocols derived from RFC 822. This RFC suggests a proposed protocol for the ARPA-Internet community, and requests discussion and suggestions for improvements.

986 Callon Jun 86 Working Draft -- Guidelines for the Use of Internet-IP addressing in the ISO Connectionless-Mode Network Protocol

This RFC suggests a method to allow the existing IP addressing, including the IP protocol field, to be used for the ISO Connectionless Network Protocol (CLNP). This is a draft solution to one of the problems inherent in the use of "ISO-grams" in the DoD Internet. Related issues will be discussed in subsequent RFCs. This RFC suggests a proposed protocol for the ARPA-Internet community, and requests discussion and suggestions for improvements.

985 Mills May 86 Requirements for Internet Gateways

This RFC summarizes the requirements for gateways to be used on networks supporting the DARPA Internet protocols. While it applies specifically to the National Science Foundation research programs, the requirements are stated in a general context and are believed applicable throughout the Internet community. The purpose of this document is to present guidance for vendors offering products that might be used or adapted for use in an Internet application. It enumerates the protocols required and gives references to RFCs and other documents describing the current specification. Suggestions and comments on this document are welcomed and can be sent to Dave Mills (Mills@D.ISI.EDU) or Dave Farber (Farber@HUEY.UDEL.EDU).

984 Clark May 86 PCMAIL: A Distributed Mail System for Personal Computers

This document is a preliminary discussion of the design of a personal-computer-based distributed mail system. Pcmail is a distributed mail system that provides mail service to an arbitrary number of users, each of which owns one or more personal computers (PCs). The system is divided into two halves. The first consists of a single entity called the "repository". The repository is a storage center for incoming mail. Mail for a Pcmail user can arrive externally from the Internet or internally from other repository users. The repository also maintains a stable copy of each user's mail state. The repository is therefore typically a computer with a large amount of disk storage. It is published for discussion and comment, and does not constitute a standard. As the proposal may change, implementation of this document is not advised.

983 Cass Apr 86 ISO Transport Services on Top of the TCP

This memo describes a proposed protocol standard for the ARPA-Internet community. The CCITT and the ISO have defined various session, presentation, and application recommendations which have been adopted by the international community and numerous vendors. To the largest extent possible, it is desirable to offer these higher level services directly to the ARPA-Internet, without disrupting existing facilities. This permits users to develop expertise with ISO and CCITT applications which previously were not available in the ARPA-Internet. The intention is that hosts within the ARPA-Internet that choose to implement ISO TSAP services on top of the TCP be expected to adopt and implement this standard. Suggestions for improvement are encouraged.

982 ANSI Apr 86 Guidelines for the Specification of the Structure of the Domain Specific Part (DSP) of the ISO Standard NSAP Address

This RFC is a draft working document of the ANSI "Guidelines for the Specification of the Structure of the Domain Specific Part (DSP) of the ISO Standard NSAP Address". It provides guidance to private address administration authorities on preferred formats and semantics for the Domain Specific Part (DSP) of an NSAP address. This RFC specifies the way in which the DSP may be constructed so as to facilitate efficient address assignment. This RFC is for informational purposes only and its distribution is unlimited and does not specify a standard of the ARPA-Internet.

981 Mills Mar 86 An Experimental Multiple-Path Routing Algorithm

This document introduces wiretap algorithms, a class of experimental, multiple routing algorithms that compute quasi-optimum routes for stations sharing a packet-radio broadcast channel. The primary route (a minimum-distance path), and additional paths ordered by distance, which serve as alternate routes should the primary route fail, are computed. This prototype is presented as an example of a class of routing algorithms and data-base management techniques that may find wider application in the Internet community. Discussions and suggestions for improvements are welcomed.

980 Jacobsen Mar 86 Protocol Document Order Information

This RFC indicates how to obtain various protocol documents used in the DARPA research community. Included is an overview of the new 1985 DDN Protocol Handbook and available sources for obtaining related documents (such as DOD, ISO, and CCITT).

979 Malis Mar 86 PSN End-to-End Functional Specification

This memo is an updated version of BBN Report 5775, "End-to-End Functional Specification". It describes important changes to the functionality of the interface between a host and the PSN (Packet Switch Node), and should be carefully reviewed by anyone involved in supporting a host on either the ARPANET or MILNET. The new End-to-End Protocol (EE) is being developed in order to correct a number of deficiencies in the old End-to-End Protocol, to improve its performance and overall throughput, and to better equip the Packet Switch Node (also known as the IMP) to support its current and anticipated host population.

978 Reynolds Feb 86 Voice File Interchange Protocol (VFIP)

The purpose of the Voice File Interchange Protocol (VFIP) is to permit the interchange of various types of speech files between different systems in the ARPA-Internet community. Suggestions for improvement are encouraged.

977 Kantor Feb 86 Network News Transfer Protocol

NNTP specifies a protocol for the distribution, inquiry, retrieval, and posting of news articles using a reliable stream-based transmission of news among the ARPA-Internet community. NNTP is designed so that news articles are stored in a central database allowing a subscriber to select only those items he wishes to read. Indexing, cross-referencing, and expiration of aged messages are also provided. This RFC suggests a proposed protocol for the ARPA-Internet community, and requests discussion and suggestions for improvements.

976 Horton Feb 86 UUCP Mail Interchange Format Standard

This document defines the standard format for the transmission of mail messages between computers in the UUCP Project. It does not however, address the format for storage of messages on one machine, nor the lower level transport mechanisms used to get the date from one machine to the next. It represents a standard for conformance by hosts in the UUCP zone.

975 Mills Feb 86 Autonomous Confederations

This RFC proposes enhancements to the Exterior Gateway Protocol (EGP) to support a simple, multiple-level routing capability while preserving the robustness features of the current EGP model. The enhancements generalize the concept of core system to include multiple communities of autonomous systems, called autonomous confederations. Discussion and suggestions for improvement are requested.

974 Partridge Jan 86 Mail Routing and the Domain System

This RFC presents a description of how mail systems on the Internet are expected to route messages based on information from the domain system. This involves a discussion of how mailers interpret MX RRs, which are used for message routing.

973 Mockapetris Jan 86 Domain System Changes and Observations

This RFC documents updates to Domain Name System specifications RFC-882 and RFC-883, suggests some operational guidelines, and discusses some experiences and problem areas in the present system.

972 Wancho Jan 86 Password Generator Protocol

This RFC specifies a standard for the ARPA-Internet community. The Password Generator Service (PWDGEN) provides a set of six randomly generated eight-character "words" with a reasonable level of pronounceability, using a multi-level algorithm. Hosts on the ARPA-Internet that choose to implement a password generator service are expected to adopt and implement this standard.

971 DeSchon Dec 85 A Survey of Data Representation Standards

This RFC is a comparison of several data representation standards that are currently in use. The standards discussed are the CCITT X.409 recommendation, the NBS Computer Based Message System (CBMS) standard, DARPA Multimedia Mail system, the Courier remote procedure call protocol, and the SUN Remote Procedure Call package. No proposals in this document are intended as standards for the ARPA-Internet at this time. Rather, it is hoped that a general consensus will emerge as to the appropriate approach to a data representation standard, leading eventually to the adoption of an ARPA-Internet standard.

970 Nagle Dec 85 On Packet Switches With Infinite Storage

The purpose of this RFC is to focus discussion on a particular problem in the ARPA-Internet and possible methods of solution. Most prior work on congestion in datagram systems focuses on buffer management. In this memo, the case of a packet switch with infinite storage is considered. Such a packet switch can never run out of buffers. It can, however, still become congested. The meaning of congestion in an infinite-storage system is explored. An unexpected result is found that shows a datagram network with infinite storage, first-in-first-out queuing, at least two packet switches, and a finite packet lifetime will, under overload, drop all packets. By attacking the problem of congestion for the infinite-storage case, new solutions applicable to switches with finite storage may be found. No proposed solutions this document are intended as standards for the ARPA-Internet at this time.

969 Clark Dec 85 NETBLT: A Bulk Data Transfer Protocol

This RFC has been replaced by RFC 998. This is a preliminary discussion of the Network Block Transfer (NETBLT) protocol. NETBLT is intended for the rapid transfer of a large quantity of data between computers. It provides a transfer that is reliable and flow controlled, and is structured to provide maximum throughput over a wide variety of networks. This description is published for discussion and comment, and does not constitute a standard. As the proposal may change, implementation of this document is not advised.

968 Cerf Dec 85 'Twas the Night Before Start-up'

This memo discusses problems that arise and debugging techniques used in bringing a new network into operation.

967 Padlipsky Dec 85 All Victims Together

This RFC proposes a new set of RFCs on how the networking code is integrated with various operating systems. It appears that this topic has not received enough exposure in the literature. Comments and suggestions are encouraged.

966 Deering Dec 85 A Multicast Extension to the Internet Protocol

This RFC defines a model of service for Internet multicasting and proposes an extension to the Internet Protocol (IP) to support such a multicast service. Discussion and suggestions for improvements are requested.

965 Aguilar Dec 85 A Format for a Graphical Communication Protocol

This RFC describes the requirements for a graphical format on which to base a graphical on-line communication protocol, and proposes an Interactive Graphical Communication Format using the GKSM session metafile. We hope this contribution will encourage the discussion of multimedia data exchange and the proposal of solutions.

964 Sidhu Nov 85 Some Problems with the Specification of the Military Standard Transmission Control Protocol

The purpose of this RFC is to provide helpful information on the Military Standard Transmission Control Protocol (MIL-STD-1778) so

that one can obtain a reliable implementation of this protocol standard. This note points out three errors with this specification. This note also proposes solutions to these problems.

963 Sidhu Nov 85 Some Problems with the Specification of the Military Standard Internet Protocol

The purpose of this RFC is to provide helpful information on the Military Standard Internet Protocol (MIL-STD-1777) so that one can obtain a reliable implementation of this protocol. This paper points out several problems in this specification. This note also proposes solutions to these problems.

962 Padlipsky Nov 85 TCP-4 Prime

This memo is in response to Bob Braden's call for a transaction oriented protocol (RFC-955), and continues the discussion of a possible transaction oriented transport protocol. This memo does not propose a standard.

961 Reynolds Dec 85 Official ARPA-Internet Protocols

This RFC has been replaced by RFC 991.

960 Reynolds Dec 85 Assigned Numbers

This RFC has been replaced by RFCs 997 and 990.

959 Postel Oct 85 File Transfer Protocol (FTP)

This memo is the official specification of the File Transfer Protocol (FTP) for the DARPA-Internet community. The primary intent is to clarify and correct the documentation of the FTP specification, not to change the protocol. The following new optional commands are included in this edition of the specification: Change to Parent Directory (CDUP), Structure Mount (SMNT), Store Unique (STOU), Remove Directory (RMD), Make Directory (MKD), Print Directory (PWD), and System (SYST). Note that this specification is compatible with the previous edition.

958 Mills Sep 85 Network Time Protocol (NTP)

This document describes the Network Time Protocol (NTP), a protocol for synchronizing a set of network clocks using a set of distributed clients and servers. NTP is built on the User Datagram Protocol (UDP), which provides a connectionless transport mechanism. It evolved from the Time Protocol and the ICMP

Timestamp message and is a suitable replacement for both. This RFC suggests a proposed protocol for the ARPA-Internet community, and requests discussion and suggestions for improvements.

957 Mills Sep 85 Experiments in Network Clock Synchronization

This RFC discusses some experiments in clock synchronization in the ARPA-Internet community, and requests discussion and suggestions for improvements. One of the services frequently neglected in computer network design is a high-quality, time-of-day clock capable of generating accurate timestamps with small errors compared to one-way network delays. Such a service would be useful for tracing the progress of complex transactions, synchronizing cached data bases, monitoring network performance and isolating problems. In this memo, one such clock service design will be described and its performance assessed. This design has been incorporated as an integral part of the network routing and control protocols of the Distributed Computer Network (DCnet) architecture.

956 Mills Sep 85 Algorithms for Synchronizing Network Clocks

This RFC discussed clock synchronization algorithms for the ARPA-Internet community, and requests discussion and suggestions for improvements. The recent interest within the Internet community in determining accurate time from a set of mutually suspicious network clocks has been prompted by several occasions in which errors were found in usually reliable, accurate clock servers after thunderstorms which disrupted their power supply. To these sources of error should be added those due to malfunctioning hardware, defective software and operator mistakes, as well as random errors in the mechanism used to set and synchronize clocks. This report suggests a stochastic model and algorithms for computing a good estimator from time-offset samples measured between clocks connected via network links. Included in this report are descriptions of certain experiments which give an indication of the effectiveness of the algorithms.

955 Braden Sep 85 Towards a Transport Service for Transaction Processing Applications

The DoD Internet Protocol Suite includes two alternative transport service protocols, TCP and UDP, which provide virtual circuit and datagram service, respectively. These two protocols represent points in the space of possible transport service attributes which are quite "far apart". We want to examine an important class of applications, those which perform what is often called

"transaction processing". We will see that the communication needs for these applications fall into the gap "between" TCP and UDP -- neither protocol is very appropriate.

954 Harrenstien Oct 85 NICNAME/WHOIS

This RFC is the official specification of the NICNAME/WHOIS protocol. This memo describes the protocol and the service. This is an update of RFC 812. Obsoletes RFC 812.

953 Harrenstien Oct 85 Hostname Server

This RFC is the official specification of the Hostname Server Protocol. This edition of the specification includes minor revisions to RFC 811 which brings it up to date. Obsoletes RFC 811.

952 Harrenstien Oct 85 DoD Internet Host Table Specification

This RFC is the official specification of the format of the Internet Host Table. This edition of the specification includes minor revisions to RFC 810 which brings it up to date. Obsoletes RFCs 810, 608.

951 Croft Sep 85 Bootstrap Protocol (BOOTP)

This RFC describes an IP/UDP bootstrap protocol (BOOTP) which allows a diskless client machine to discover its own IP address, the address of a server host, and the name of a file to be loaded into memory and executed. The bootstrap operation can be thought of as consisting of TWO PHASES. This RFC describes the first phase, which could be labeled `address determination and bootfile selection'. After this address and filename information is obtained, control passes to the second phase of the bootstrap where a file transfer occurs. The file transfer will typically use the TFTP protocol, since it is intended that both phases reside in PROM on the client. However BOOTP could also work with other protocols such as SFTP or FTP. This RFC suggests a proposed protocol for the ARPA-Internet community, and requests discussion and suggestions for improvements.

950 Mogul Aug 85 Internet Standard Subnetting Procedure

This memo discusses the utility of "subnets" of Internet networks, which are logically visible sub-sections of a single Internet network. For administrative or technical reasons, many organizations have chosen to divide one Internet network into

several subnets, instead of acquiring a set of Internet network numbers. This memo specifies procedures for the use of subnets. These procedures are for hosts (e.g., workstations). The procedures used in and between subnet gateways are not fully described. Important motivation and background information for a subnetting standard is provided in RFC-940. This RFC specifies a protocol for the ARPA-Internet community. If subnetting is implemented it is strongly recommended that these procedures be followed.

949 Padlipsky Jul 85 FTP Unique-Named Store Command

There are various contexts in which it would be desirable to have an FTP command that had the effect of the present STOR but rather than requiring the sender to specify a file name istead caused the resultant file to have a unique name relative to the current directory.

This RFC proposes an extension to the File Transfer Protocol for the ARPA-Internet community, and requests discussion and suggestions for improvements.

948 Winston Jun 85 Two Methods for the Transmission of IP Datagrams Over IEEE 802.3 Networks

This memo describes two methods of encapsulating Internet Protocol (IP) datagrams on an IEEE 802.3 network.

947 Lebowitz Jun 85 Multi-Network Broadcasting Within the Internet

This RFC describes the extension of a network's broadcast domain to include more than one physical network through the use of a broadcast packet repeater.

946 Nedved May 85 Telnet Terminal Location Number Option

Many systems provide a mechanism for finding out where a user is logged in from usually including information about telephone extension and office occupants names. The information is useful for physically locating people and/or calling them on the phone. In 1982 CMU designed and implemented a terminal location database and modified existing network software to handle a 64-bit number called the Terminal Location Number (or TTYLOC). It now seems appropriate to incorporate this mechanism into the TCP-based network protocol family. The mechanism is not viewed as a replacement for the Terminal Location Telnet Option

(SEND-LOCATION) but as a shorthand mechansim for communicating terminal location information between hosts in a localized community. This RFC proposes a new option for Telnet for the ARPA-Internet community, and requests discussion and suggestions for improvements.

945 Postel May 85 A DoD Statement on the NRC Report

In May 1983, the National Research Council (NRC) was asked jointly by the DoD and NBS to study the issues and recommend a course of action. The final report of the NRC committee was published in February 1985 (see RFC-942). The enclosed letter is from Donald C. Latham (ASDC3I) to DCA transmitting the NRC report and requesting specific actions relative to the recommendations of the report.

This RFC reproduces a letter from the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence (ASDC3I) to the Director of the Defense Communications Agency (DCA). This letter is distributed for information only.

944 Reynolds Apr 85 Official ARPA-Internet Protocols

This RFC has been replaced by RFC 991.

943 Reynolds Apr 85 Assigned Numbers

This RFC has been replaced by RFCs 997 and 990.

942 . NRC Feb 85 Transport Protocols for Department of Defense Data Networks

This RFC reproduces the National Research Council report resulting from a study of the DoD Internet Protocol (IP) and Transmission Control Protocol (TCP) in comparison with the ISO Internet Protocol (ISO-IP) and Transport Protocol level 4 (TP-4).

941 ISO Apr 85 Addendum to the Network Service Definition Covering Network Layer Addressing

This Addendum to the Network Service Definition Standard, ISO 8348, defines the abstract syntax and semantics of the Network Address (Network Service Access Point Address). The Network Address defined in this Addendum is the address that appears in the primitives of the connection-mode Network Service as the calling address, called address, and responding address parameters, and in the primitives of the connectionless-mode Network Service as the source address and destination address parameters.

This document is distributed as an RFC for information only. It does not specify a standard for the ARPA-Internet.

940 GADS Apr 85 Toward an Internet Standard Scheme for Subnetting

Several sites now contain a complex of local links connected to the Internet via a gateway. The details of the internal connectivity are of little interest to the rest of the Internet. One way of organizing these local complexes of links is to use the same strategy as the Internet uses to organize networks, that is, to declare each link to be an entity (like a network) and to interconnect the links with devices that perform routing functions (like gateways). This general scheme is called subnetting, the individual links are called subnets, and the connecting devices are called subgateways (or bridges, or gateways). This RFC discusses standardizing the protocol used in subnetted environments in the ARPA-Internet. Distribution of this memo is unlimited. The author of this RFC is the Gateway Algorithms and Data Structures (GADS) Task Force, chaired by David L. Mills.

939 NRC Feb 85 Executive Summary of the NRC Report on Transport Protocols for Department of Defense Data Networks

This RFC reproduces the material from the "front pages" of the National Research Council report resulting from a study of the DOD Internet Protocol (IP) and Transmission Control Protocol (TCP) in comparison with the ISO Internet Protocol (ISO-IP) and Transport Protocol level 4 (TP-4). The point of this RFC is to make the text of the Executive Summary widely available in a timely way. The order of presentation has been altered, and the pagination changed.

938 Miller Feb 85 Internet Reliable Transaction Protocol Functional and Interface Specification

This RFC is being distributed to members of the DARPA research community in order to solicit their reactions to the proposals contained in it. While the issues discussed may not be directly relevant to the research problems of the DARPA community, they may be interesting to a number of researchers and implementors. This RFC suggests a proposed protocol for the ARPA-Internet community, and requests discussion and suggestions for improvements.

937 Reynolds Feb 85 .. Post Office Protocol - Version 2

This RFC suggests a simple method for workstations to dynamically access mail from a mailbox server. This RFC specifies a proposed protocol for the ARPA-Internet community, and requests discussion and suggestions for improvement. This memo is a revision of RFC 918.

936 Karels Feb 85 Another Internet Subnet Addressing Scheme

There have been several proposals for schemes to allow the use of a single Internet network number to refer to a collection of physical networks under common administration which are reachable from the rest of the Internet by a common route. Such schemes allow a simplified view of an otherwise complicated topology from hosts and gateways outside of this collection. They allow the complexity of the number and type of these networks, and routing to them, to be localized. Additions and changes in configuration thus cause no detectable change, and no interruption of service, due to slow propagation of routing and other information outside of the local environment. These schemes also simplify the administration of the network, as changes do not require allocation of new network numbers for each new cable installed. This proposal discusses an alternative scheme, one that has been in use at the University of California, Berkeley since April 1984. This RFC suggests a proposed protocol for the ARPA-Internet community, and requests discussion and suggestions for improvements.

935 Robinson Jan 85 Reliable Link Layer Protocols

This RFC discusses protocols proposed recently in RFCs 914 and 916, and suggests a proposed protocol that could meet the same needs addressed in those memos. The stated need is reliable communication between two programs over a full-duplex, point-to-point communication link, and in particular the RFCs address the need for such communication over an asynchronous link at relatively low speeds. The suggested protocol uses the methods of existing national and international data link layer standards. This RFC suggests a proposed protocol for the ARPA-Internet community, and requests discussion and suggestions for improvements.

934 Rose Jan 85 Proposed Standard for Message Encapsulation

This memo concerns itself with message forwarding. Forwarding can be thought of as encapsulating one or more messages inside

another. Although this is useful for transfer of past correspondence to new recipients, without a decapsulation process (which this memo terms "bursting"), the forwarded messages are of little use to the recipients because they can not be distributed, forwarded, replied-to, or otherwise processed as separate individual messages. In order to burst a message it is necessary to know how the component messages were encapsulated in the draft. At present there is no unambiguous standard for interest group digests. This RFC proposes a proposed protocol for the ARPA-Internet community, and requests discussion and suggestions for improvements.

933 Silverman Jan 85 Output Marking Telnet Option

This proposed option would allow a Server-Telnet to send a banner to a User-Telnet so that this banner would be displayed on the workstation screen independently of the application software running in the Server-Telnet.

932 Clark Jan 85 A Subnetwork Addressing Scheme

This RFC proposes an alternative addressing scheme for subnets which, in most cases, requires no modification to host software whatsoever. The drawbacks of this scheme are that the total number of subnets in any one network are limited, and that modification is required to all gateways.

931 StJohns Jan 85 Authentication Server

This RFC suggests a proposed protocol for the ARPA-Internet community, and requests discussion and suggestions for improvements. This is the second draft of this proposal (superseding RFC 912) and incorporates a more formal description of the syntax for the request and response dialog, as well as a change to specify the type of user identification returned.

930 Solomon Jan 85 Telnet Terminal Type Option

This RFC specifies a standard for the ARPA-Internet community. Hosts on the ARPA-Internet that exchange terminal type information within the Telnet protocol are expected to adopt and implement this standard. Distribution of this memo is unlimited. This standard supersedes RFC 884. The only change is to specify that the TERMINAL-TYPE IS sub-negotiation should be sent only in response to the TERMINAL-TYPE SEND sub-negotiation.

929 Lilienkamp Dec 84 Proposed Host-Front End Protocol

The Host-Front End Protocol introduced in RFC 928 is described in detail in this memo. The first order of business is to declare that THIS IS A PROPOSAL, NOT A FINAL STANDARD, and the second order of business is to request that any readers of these documents who are able to do test implementations (a) do so and (b) coordinate their efforts with the author. This RFC suggests a proposed protocol for the ARPA-Internet community, and requests discussion and suggestions for improvements.

928 Padlipsky Dec 84 Introduction to Proposed DOD Standard H-FP

The broad outline of the Host-Front End Protocol introduced here and described in RFC 929 is the result of the deliberations of a number of experienced H-FP designers, who sat as a committee of the DoD Protocol Standards Technical Panel. It is the intent of the designers that the protocol be subjected to multiple test implementations and probable iteration before being agreed upon as any sort of "standard". Therefore, the first order of business is to declare that THIS IS A PROPOSAL, NOT A FINAL STANDARD, and the second order of business is to request that any readers of these documents who are able to do test implementations (a) do so and (b) coordinate their efforts with the author. This RFC suggests a proposed protocol for the ARPA-Internet community, and requests discussion and suggestions for improvements.

927 Anderson Dec 84 TACACS User Identification Telnet Option

The following is the description of a Telnet option designed to facilitate double login avoidance. It is intended primarily for TAC connections to target hosts on behalf of TAC users, but it can be used between any two consenting hosts. For example, all hosts at one site (e.g., BBN) can use this option to avoid double login when TELNETing to one another.

This RFC suggests a proposed protocol for the ARPA-Internet community, and requests discussion and suggestions for improvements.

926 ISO Dec 84 Protocol for Providing the Connectionless-Mode Network Services

This note is the draft ISO protocol roughly similar to the DoD Internet Protocol. This document has been prepared by retyping the text of ISO DIS 8473 of May 1984, which is currently undergoing voting within ISO as a Draft International Standard

(DIS). This document is distributed as an RFC for information only. It does not specify a standard for the ARPA-Internet.

925 Postel Oct 84 Multi-LAN Address Resolution

The problem of treating a set of local area networks (LANs) as one Internet network has generated some interest and concern. It is inappropriate to give each LAN within a site a distinct ARPA-Internet network number. It is desirable to hide the details of the interconnections between the LANs within a site from people, gateways, and hosts outside the site. The question arises on how to best do this, and even how to do it at all. In RFC 917, Jeffery Mogul makes a case for the use of "explicit subnets" in a multi-LAN environment. The explicit subnet scheme is a call to recursively apply the mechanisms the ARPA-Internet uses to manage networks to the problem of managing LANs within one network. In this note I urge another approach: the use of "transparent subnets" supported by a multi-LAN extension of the Address Resolution Protocol. This RFC suggests a proposed protocol for the ARPA-Internet community, and requests discussion and suggestions for improvements.

924 Reynolds Oct 84 Official ARPA-Internet Protocols

This RFC has been replaced by RFC 991.

923 Reynolds Oct 84 Assigned Numbers

This RFC has been replaced by RFCs 997 and 990.

922 Mogul Oct 84 Broadcasting Internet Datagrams in the Presence of Subnets

We propose simple rules for broadcasting Internet datagrams on local networks that support broadcast, for addressing broadcasts, and for how gateways should handle them.

This RFC suggests a proposed protocol for the ARPA-Internet community, and requests discussion and suggestions for improvements.

921 Postel Oct 84 Domain Name System Implementation Schedule - Revised

This memo is a policy statement on the implementation of the Domain Style Naming System in the ARPA-Internet. This memo is an update of RFC 881, and RFC 897. This is an official policy statement of the IAB and the DARPA. The intent of this memo is to detail the schedule for the implementation for the Domain Style

Naming System. The explanation of how this system works is to be found in the references.

920 Postel Oct 84 Domain Requirements

This memo states the requirements on establishing a Domain, and introduces the limited set of top level domains. This memo is a policy statement on the requirements of establishing a new domain in the ARPA-Internet and the DARPA research community. This is an official policy statement of the IAB and the DARPA.

919 Mogul Oct 84 Broadcasting Internet Datagrams

This RFC proposes simple rules for broadcasting Internet datagrams on local networks that support broadcast, for addressing broadcasts, and for how gateways should handle them. This RFC suggests a proposed protocol for the ARPA-Internet community, and requests discussion and suggestions for improvements.

918 Reynolds Oct 84 Post Office Protocol (POP)

Updated by RFC 937.

917 Mogul Oct 84 Internet Subnets

This memo discusses subnets and proposes procedures for the use of subnets, including approaches to solving the problems that arise, particularly that of routing. A subnet of an Internet network is a logically visible sub-section of a single Internet network. For administrative or technical reasons, many organizations have chosen to divide one Internet network into several subnets, instead of acquiring a set of Internet network numbers. This RFC suggests a proposed protocol for the ARPA-Internet community, and requests discussion and suggestions for improvements.

916 Finn Oct 84 Reliable Asynchronous Transfer Protocol (RATP)

This paper proposes and specifies a protocol which allows two programs to reliably communicate over a communication link. It ensures that the data entering one end of the link if received arrives at the other end intact and unaltered. The protocol, named RATP, is designed to operate over a full duplex point-to-point connection. It contains some features which tailor it to the RS-232 links now in common use.

This RFC suggests a proposed protocol for the ARPA-Internet community, and requests discussion and suggestions for improvements.

915 Elvy Dec 84 Network Mail Path Service

The network mail path service fills the current need of people to determine mailbox addresses for hosts that are not part of the ARPA-Internet but can be reached by one or more relay hosts that have Unix to Unix Copy (UUCP) mail, CSNET mail, MAILNET mail, BITNET mail, etc. Anyone can use the service if they have TCP/TELENET to one of the hosts with a mail path server. This RFC proposes a new service for the ARPA-Internet community and requests discussion and suggestions for improvements.

914 Farber Sep 84 A Thinwire Protocol

This document focuses discussion on the particular problems in the ARPA-Internet of low speed network interconnection with personal computers, and possible methods of solution. None of the proposed solutions in this document are intended as standards for the ARPA-Internet. Rather, it is hoped that a general consensus will emerge as to the appropriate solution to the problems, leading eventually to the adoption of standards.

913 Lottor Sep 84 Simple File Transfer Protocol

This memo describes a proposed Simple File Transfer Protocol (SFTP). It fills the need of people wanting a protocol that is more useful than TFTP but easier to implement (and less powerful) than FTP. SFTP supports user access control, file transfers, directory listing, directory changing, file renaming, and deleting. Discussion of this proposal is encouraged, and suggestions for improvements may be sent to the author.

912 StJohns Sep 84 Authentication Service

This memo describes a proposed authentication protocol for verifying the identity of a user of a TCP connection. Given a TCP port number pair, it returns a character string which identifies the owner of that connection on the server's system. Suggested uses include automatic identification and verification of a user during an FTP session, additional verification of a TAC dial up user, and access verification for a generalized network file server.

911 Kirton Aug 84 EGP Gateway under Berkeley Unix 4.2

This memo describes an implementation of the Exterior Gateway Protocol (EGP) (in that sense it is a status report). The memo also discusses some possible extentions and some design issues (in that sense it is an invitation for further discussion).

910 Forsdick Aug 84 Multimedia Mail Meeting Notes

This memo is a report on a meeting about the experimental multimedia mail system (and in a sense a status report on that experiment). The meeting was held at Bolt Beranek and Newman on 23-24 July 1984 to discuss recent progress by groups who are building multimedia mail systems and to discuss a variety of issues related to the further development of multimedia systems. Representatives were present from BBN, ISI, SRI and Linkabit. Distribution of this memo is unlimited.

909 Welles Jul 84 Loader Debugger Protocol

The Loader Debugger Protocol (LDP) is an application layer protocol for loading, dumping, and debugging target machines from hosts in a network environment. This RFC specifies a proposed protocol for the ARPA-Internet and DARPA research community, and requests discussion and suggestions for improvements.

908 Velten Jul 84 Reliable Data Protocol

The Reliable Data Protocol (RDP) is designed to provide a reliable data transport service for packet-based applications. This RFC specifies a proposed protocol for the ARPA-Internet and DARPA research community, and requests discussion and suggestions for improvemts.

907 Storch Jul 84 Host Access Protocol Specification

This document specifies the Host Access Protocol (HAP). Although HAP was originally designed as the network-access level protocol for the DARPA/DCA sponsored Wideband Packet Satellite Network, it is intended that it evolve into a standard interface SATNET and TACNET (aka MATNET) as well as the Wideband Network. HAP is an experimental protocol, and will undergo further revision as new capabilities are added and/or different satellite networks are suported. Implementations of HAP should be performed in coordination with satellite network development and operations personnel.

906 Finlayson Jun 84 Bootstrap Loading Using TFTP

It is often convenient to be able to bootstrap a computer system from a communications network. This RFC proposes the use of the IP/TFTP protocol for bootstrap loading in this case.

905 ISO Apr 84 ISO Transport Protocol Specification (ISO DP 8073)

This is the current specification of the ISO Transport Protocol. This document is the text of ISO/TC97/SC16/N1576 as corrected by ISO/TC97/SC16/N1695. This is the specification currently being voted on in ISO as a Draft International Standard (DIS). This document is distributed as an RFC for your information only, it does not specify a standard for the ARPA-Internet or DARPA research community. Our thanks to Alex McKenzie of BBN for making this online version available. Please note the size of this document, the file contains 258,729 characters.

904 Mills Apr 84 Exterior Gateway Protocol Formal Specification

This is the specification of the Exterior Gateway Protocol (EGP). This memo updates portions of RFC 888 and RFC 827. This RFC specifies an official protocol of the DARPA community for use between gateways of different autonomous systems in the ARPA-Internet.

903 Finlayson Jun 84 A Reverse Address Resolution Protocol

This RFC suggests a method for workstations to dynamically find their protocol address (e.g., their Internet Address), when they know only their hardware address (e.g., their attached physical network address). This RFC specifies a proposed protocol for the ARPA-Internet community, and requests discussion and suggestions for improvement.

902 Postel Jul 84 ARPA-Internet Protocol Policy

The purpose of this memo is to explain how protocol standards are adopted for the ARPA-Internet and the DARPA research community. There are three important aspects to be discussed: the process, the authority, and the complex relationship between the DARPA community and the DDN community. This memo is a policy statement on how protocols become official standards for the ARPA-Internet and the DARPA research community. This is an official policy statement of the ICCB and the DARPA.

901 Reynolds Jun 84 Official ARPA-Internet Protocols

This RFC has been replaced by RFC 991.

900 Reynolds Jun 84 Assigned Numbers

This RFC has been replaced by RFCs 997 and 990.

899 Postel Apr 84 Requests For Comments Summary

A summary of the Request for Comments documents from RFC 800-898.

898 Hinden Apr 84 Gateway Special Interest Group Meeting Notes

This memo is a report on the Gateway Special Interest Group Meeting that was held at ISI on 28 and 29 February 1984. Robert Hinden of BBNCC chaired, and Jon Postel of ISI hosted the meeting. Approximately 35 gateway designers and implementors attended. These notes are based on the recollections of Jon Postel and Mike Muuss. Under each topic area are Jon Postel's brief notes, and additional details from Mike Muuss. This memo is a report on the meeting. No conclusions, decisions, or policy statements are documented in this note.

897 Postel Feb 84 Domain Name System Implementation Schedule

This memo is a policy statement on the implementation of the Domain Style Naming System in the ARPA-Internet. This memo is a partial update of RFC 881. The intent of this memo is to detail the schedule for the implementation of the Domain Style Naming System. The names of hosts will be changed to Domain style names. Hosts will begin to use Domain style names on 14-Mar-84, and the use of old style names will be completely phased out before 2-May-84. This applies to both the ARPA research hosts and the DDN operational hosts. This is an official policy statement of the ICCB and the DARPA.

896 Nagle Jan 84 Congestion Control in IP/TCP Internetworks

This memo discusses some aspects of congestion control in IP/TCP Internetworks. It is intended to stimulate thought and further discussion of this topic. While some specific suggestions are made for improved congestion control implementation, this memo does not specify any standards.

895 Postel Apr 84 A Standard for the Transmission of IP Datagrams over Experimental Ethernet Networks

This RFC specifies a standard method of encapsulating Internet

Protocol (IP) datagrams on an Experimental Ethernet. This RFC specifies a standard protocol for the ARPA-Internet community.

894 Hornig Apr 84 A Standard for the Transmission of IP Datagrams over Ethernet Networks

This RFC specifies a standard method of encapsulating Internet Protocol (IP) datagrams on an Ethernet. This RFC specifies a standard protocol for the ARPA-Internet community.

893 Leffler Apr 84 Trailer Encapsulations

This RFC discusses the motivation for use of "trailer encapsulations" on local-area networks and describes the implementation of such an encapsulation on various media. This document is for information only. This is NOT an official protocol for the ARPA-Internet community.

892 ISO Dec 83 ISO Transport Protocol Specification

This is a draft version of the transport protocol being standardized by the ISO. This version also appeared in the ACM SIGCOMM Computer Communication Review (V.12, N.3-4) July-October 1982. This version is now out of date.

891 Mills Dec 83 DCN Local-Network Protocols

This RFC provides a description of the DCN protocols for maintaining connectivity, routing, and clock information in a local network. These procedures may be of interest to the designers and implementers of other local networks.

890 Postel Feb 84 Exterior Gateway Protocol Implementation Schedule

This memo is a policy statement on the implementation of the Exterior Gateway Protocol (EGP) in the ARPA-Internet. This is an official policy statement of ICCB and DARPA. After 1-Aug-84 there shall be no dumb gateways in the Internet. Every gateway must be a member of some autonomous system. Some gateway of each autonomous system must exchange routing information with some gateway of the core autonomous system using the Exterior Gateway Protocol.

889 Mills Dec 83 Internet Delay Experiments

This memo reports on some measurements of round-trip times in the Internet and suggests some possible improvements to the TCP

retransmission timeout calculation. This memo is both a status report on the ARPA-Internet and advice to TCP implementers.

888 Seamonson Jan 84 "Stub" Exterior Gateway Protocol

This RFC describes the Exterior Gateway Protocol (EGP) used to connect Stub Gateways to an Autonomous System of core Gateways. This document specifies the working protocol, and defines an ARPA official protocol. All implementers of Gateways should carefully review this document.

887 Accetta Dec 83 Resource Location Protocol

This RFC specifies a draft standard for the ARPA-Internet community. It describes a resource location protocol for use in the ARPA-Internet. It is most useful on networks employing technologies which support some method of broadcast addressing, however it may also be used on other types of networks. For maximum benefit, all hosts which provide significant resources or services to other hosts on the ARPA-Internet should implement this protocol. Hosts failing to implement the Resource Location Protocol risk being ignored by other hosts which are attempting to locate resources on the ARPA-Internet.

886 Rose Dec 83 Proposed Standard for Message Header Munging

This RFC specifies a draft standard for the ARPA-Internet community. It describes the rules to be used when transforming mail from the conventions of one message system to those of another message system. In particular, the treatment of header fields, and recipient addresses is specified.

885 Postel Dec 83 Telnet End of Record Option

This RFC specifies a standard for the ARPA-Internet community. It specifies a method for marking the end of records in data transmitted on Telnet connections.

884 Solomon Dec 83 Telnet Terminal Type Option

This RFC specifies a standard for the ARPA-Internet community. It specifies a method for exchanging terminal type information in the Telnet protocol.

883 Mockapetris Nov 83 Domain Names - Implementation and Specification

This RFC discusses the implementation of domain name servers and resolvers, specifies the format of transactions, and discusses the use of domain names in the context of existing mail systems and other network software.

882 Mockapetris Nov 83 Domain Names - Concepts and Facilities

This RFC introduces domain style names, their use for DDN/ARPA-Internet mail and host address support, and the protocol and servers used to implement domain name facilities.

881 Postel Nov 83 The Domain Names Plan and Schedule

This RFC outlines a plan and schedule for the implementation of domain style names throughout the DDN/ARPA-Internet community. The introduction of domain style names will impact all hosts on the DDN/ARPA-Internet.

880 Reynolds Oct 83 Official Protocols

This RFC has been replaced by RFC 991.

879 Postel Nov 83 The TCP Maximum Segment Size and Related Topics

This RFC discusses the TCP Maximum Segment Size Option and related topics. The purpose is to clarify some aspects of TCP and its interaction with IP. This memo is a clarification to the TCP specification, and contains information that may be considered as "advice to implementers".

878 Malis Dec 83 The ARPANET 1822L Host Access Protocol

This RFC specifies the ARPANET 1822L Host Access Protocol, which is a successor to the existing 1822 Host Access Protocol. The 1822L procedure allows ARPANET hosts to use logical identifiers as well as 1822 physical interface identifiers to address each other.

877 Korb Sep 83 A Standard for the Transmission of IP Datagrams Over Public Data Networks

This RFC specifies a standard adopted by CSNET, the VAN gateway,

and other organizations for the transmission of IP datagrams over the X.25-based public data networks.

876 Smallberg Sep 83 Survey of SMTP Implementations

This RFC is a survey of implementation status. It does not specify an official protocol, but rather notes the status of implementation of aspects of a protocol. It is expected that the status of the hosts reported on will change. This information must be treated as a snapshot of the state of these implemetations.

875 Padlipsky Sep 82 Gateways, Architectures, and Heffalumps

This RFC is a discussion about the role of gateways in an internetwork, especially the problems of translating or mapping protocols between different protocol suites. The discussion notes possible functionality mis-matches, undesirable routing "singularity points", flow control issues, and high cost of translating gateways. Originally published as M82-51 by the MITRE Corporation, Bedford, Massachusetts.

874 Padlipsky Sep 82 A Critique of X.25

This RFC is an analysis of X.25 pointing out some problems in the conceptual model, particularly the conflict between the interface aspects and the end-to-end aspects. The memo also touches on security, and implementation issues. Originally published as M82-50 by the MITRE Corporation, Bedford, Massachusetts.

873 Padlipsky Sep 82 The Illusion of Vendor Support

This memo takes issue with the claim that international standards in computer protocols presently provide a basis for low cost vendor supported protocol implementations. Originally published as M82-49 by the MITRE Corporation, Bedford, Massachusetts.

872 Padlipsky Sep 82 TCP-ON-A-LAN

This memo attacks the notion that TCP cannot be appropriate for use on a Local Area Network. Originally published as M82-48 by the MITRE Corporation, Bedford Massachusetts.

871 Padlipsky Sep 82 A Perspective on the Arpanet Reference Model

This RFC is primarily intended as a perspective on the ARM and points out some of the differences between the ARM and the ISORM

which were expressed by members in NWG general meetings, NWG protocol design committee meetings, the ARPA-Internet Working Group, and private conversations over the intervening years. Originally published as M82-47 by the MITRE Corporation, Bedford, Massachusetts.

870 Reynolds Oct 83 Assigned Numbers

This RFC has been replaced by RFCs 997 and 990.

869 Hinden Dec 83 A Host Monitoring Protocol

This RFC specifies the Host Monitoring Protocol used to collect information from various types of hosts in the Internet. Designers of Internet communications software are encouraged to consider this protocol as a means of monitoring the behavior of their creations.

868 Postel May 83 Time Protocol

This RFC specifies a standard for the ARPA-Internet community. Hosts on the ARPA-Internet that choose to implement a Time Protocol are expected to adopt and implement this standard. This protocol provides a site-independent, machine readable date and time. The Time service sends back to the originating source the time in seconds since midnight on January first 1900.

867 Postel May 83 Daytime Protocol

This RFC specifies a standard for the ARPA-Internet community. Hosts on the ARPA-Internet that choose to implement a Daytime Protocol are expected to adopt and implement this standard. The Daytime service simply sends the current date and time as a character string without regard to the input.

866 Postel May 83 Active Users

This RFC specifies a standard for the ARPA-Internet community. Hosts on the ARPA-Internet that choose to implement an Active Users Protocol are expected to adopt and implement this standard. The Active Users service simply sends a list of the currently active users on the host without regard to the input.

865 Postel May 83 Quote of the Day Protocol

This RFC specifies a standard for the ARPA-Internet community. Hosts on the ARPA-Internet that choose to implement a Quote of the Day Protocol are expected to adopt and implement this standard.

The Quote of the Day service simply sends a short message without regard to the input.

864 Postel May 83 Character Generator Protocol

This RFC specifies a standard for the ARPA-Internet community. Hosts on the ARPA-Internet that choose to implement a Character Generator Protocol are expected to adopt and implement this standard. The Character Generator service simply sends data without regard to the input.

863 Postel May 83 Discard Protocol

This RFC specifies a standard for the ARPA-Internet community. Hosts on the ARPA-Internet that choose to implement a Discard Protocol are expected to adopt and implement this standard. The Discard service simply throws away any data it receives.

862 Postel May 83 Echo Protocol

This RFC specifies a standard for the ARPA-Internet community. Hosts on the ARPA-Internet that choose to implement a Echo Protocol are expected to adopt and implement this standard. The Echo service simply sends back to the originating source any data it receives.

861 Postel May 83 Telnet Extended Options - List Option

This Telnet Option provides a mechanism for extending the set of possible options. This RFC specifies a standard for the ARPA-Internet community. Hosts on the ARPA-Internet are expected to adopt and implement this standard. Obsoletes NIC 16239.

860 Postel May 83 Telnet Timing Mark Option

This Telnet Option provides a way to check the roundtrip path between two Telnet modules. This RFC specifies a standard for the ARPA-Internet community. Hosts on the ARPA-Internet are expected to adopt and implement this standard. Obsoletes NIC 16238.

859 Postel May 83 Telnet Status Option

This Telnet Option provides a way to determine the other Telnet module's view of the status of options. This RFC specifies a standard for the ARPA-Internet community. Hosts on the ARPA-Internet are expected to adopt and implement this standard. Obsoletes RFC 651 (NIC 31154).

858 Postel May 83 Telnet Suppress Go Ahead Option

This Telnet Option disables the exchange of go-ahead signals between the Telnet modules. This RFC specifies a standard for the ARPA-Internet community. Hosts on the ARPA-Internet are expected to adopt and implement this standard. Obsoletes NIC 15392.

857 Postel May 83 Telnet Echo Option

This Telnet Option enables remote echoing by the other Telnet module. This RFC specifies a standard for the ARPA-Internet community. Hosts on the ARPA-Internet are expected to adopt and implement this standard. Obsoletes NIC 15390.

856 Postel May 83 Telnet Binary Transmission

This Telnet Option enables a binary data mode between the Telnet modules. This RFC specifies a standard for the ARPA-Internet community. Hosts on the ARPA-Internet are expected to adopt and implement this standard. Obsoletes NIC 15389.

855 Postel May 83 Telnet Option Specifications

This memo specifies the general form for Telnet options and the directions for their specification. This RFC specifies a standard for the ARPA-Internet community. Hosts on the ARPA-Internet are expected to adopt and implement this standard. Obsoletes RFC 651, NIC 18640.

854 Postel May 83 Telnet Protocol Specifications

This is the specification of the Telnet protocol used for remote terminal access in the ARPA-Internet. The purpose of the Telnet Protocol is to provide a fairly general, bi-directional, eight-bit byte oriented communications facility. Its primary goal is to allow a standard method of interfacing terminal devices and terminal-oriented processes to each other. It is envisioned that the protocol may also be used for terminal-terminal communication ("linking") and process-process communication (distributed computation). This RFC specifies a standard for the ARPA-Internet community. Hosts on the ARPA-Internet are expected to adopt and implement this standard. Obsoletes NIC 18639.

853 Never Issued.

852 Malis Apr 83 The ARPANET Short Blocking Feature

This RFC specifies the ARPANET Short Blocking Feature, which will allow ARPANET hosts to optionally shorten the IMP's host blocking timer. This Feature is a replacement of the ARPANET non-blocking host interface, which was never implemented, and will be available to hosts using either the 1822 or 1822L Host Access Protocol. This RFC is also being presented as a solicitation of comments on the Short Blocking Feature, especially from host network software implementers and maintainers.

851 Malis Apr 83 The ARPANET 1822L Host Access Protocol

This RFC specifies the ARPANET 1822L Host Access Protocol, which is a successor to the existing 1822 Host Access Protocol. 1822L allows ARPANET hosts to use logical names as well as 1822's physical port locations to address each other. This RFC is also being presented as a solicitation of comments on 1822L, especially from host network software implementers and maintainers. Obsoletes RFC 802.

850 Horton Jun 83 Standard for Interchange of USENET Messages

This memo is distributed as an RFC only to make this information easily accessible to researchers in the ARPA-Internet community. It does not specify an Internet standard. This RFC defines the standard format for interchange of Network News articles among USENET sites. It describes the format for articles themselves, and gives partial standards for transmission of news. The news transmission is not entirely standardized in order to give a good deal of flexibility to the individual hosts to choose transmission hardware and software, whether to batch news and so on.

849 Crispin May 83 Suggestions for Improved Host Table Distribution

This RFC actually is a request for comments. The issue dealt with is that of a naming registry update procedure, both as exists currently and what could exist in the future. None of the proposed solutions are intended as standards at this time; rather it is hoped that a general consensus will emerge as the appropriate solution, leaving eventually to the adoption of standards.

848 Smallberg Mar 83 Who provides the "Little" TCP Services?

This RFC lists those hosts which provide any of these "little" TCP services: The list of hosts were taken from the NIC hostname table of 24-Feb-83. The tests were run on February 23 and 24, and March 3 and 5 from ISI-VAXA.ARPA.

847 Westine Feb 83 Summary of Smallberg Surveys

This is a summary of the surveys of Telnet, FTP and Mail (SMTP) servers conducted by David Smallberg in December 1982, January and February 1983 as reported in RFC 832-843, 845-846. This memo extracts the number of hosts that accepted the connection to their server for each of Telnet, FTP, and SMTP, and compares it to the total host in the ARPA-Internet (not counting TACs or ECHOS).

846 Smallberg Feb 83 Who Talks TCP? -- Survey of 22 February 1983

This RFC is a survey of hosts to identify the implementation status of Telnet, FTP, and Mail on TCP. The list of hosts was taken from the NIC hostname table of 18-Feb-83. The tests were run on 22-Feb-83 from ISI-VAXA.ARPA.

845 Smallberg Feb 83 Who Talks TCP? -- Survey of 15 February 1983

This RFC is a survey of hosts to identify the implementation status of Telnet, FTP, and Mail on TCP. The list of hosts was taken from the NIC hostname table of 3-Feb-83. The tests were run on 15-Feb-83 from ISI-VAXA.ARPA.

844 Clements Feb 83 Who Talks ICMP, too? Survey of 18 February 1983

This survey determines how many hosts are able to respond to Telnet connections from a user at a class C site. This requires, in addition to IP and TCP, participation in gateway routing via ICMP and handling of Class C addresses. The list of hosts was taken from RFC 843, extracting only those hosts which are listed there as accepting Telnet connection. The tests were run on 18-Feb-83.

843 Smallberg Feb 83 Who Talks TCP? -- Survey of 8 February 1983

This RFC is a survey of hosts to identify the implementation status of Telnet, FTP, and Mail on TCP. The list of hosts was

taken from the NIC hostname table of 3-Feb-83. The tests were run on 8-Feb-83 and on 9-Feb-83 from ISI-VAXA.ARPA.

842 Smallberg Feb 83 Who Talks TCP? -- Survey of 1 February 1983

This RFC is a survey of hosts to identify the implementation status of Telnet, FTP, and Mail on TCP. The list of hosts was taken from the NIC hostname table of 28-Jan-83. The tests were run on 1-Feb-83 and on 2-Feb-83 ISI-VAXA.ARPA.

841 FIPS PUB 98 Jan 83 Specification for Message Format for Computer Based Message Systems

This RFC is FIPS 98. The purpose of distributing this document as an RFC is to make it easily accessible to the ARPA research community. This RFC does not specify a standard for the ARPA-Internet. Obsoletes RFC 806.

840 Postel Apr 83 Official Protocols

This RFC has been replaced by RFC 991.

839 Smallberg Jan 83 Who Talks TCP?

This RFC is a survey of hosts to identify the implementation status of Telnet, FTP, and Mail on TCP. The list of hosts was taken from the NIC hostname table of 31-Dec-82. The tests were run on 25-Jan-83.

838 Smallberg Jan 83 Who Talks TCP?

This RFC is a survey of hosts to identify the implementation status of Telnet, FTP, and Mail on TCP. The list of hosts was taken from the NIC hostname table of 31-Dec-82. The tests were run on 18-Jan-83.

837 Smallberg Jan 83 Who Talks TCP?

This RFC is a survey of hosts to identify the implementation status of Telnet, FTP, and Mail on TCP. The list of hosts was taken from the NIC hostname table of 31-Dec-82. The tests were run on 11-Jan-83.

836 Smallberg Jan 83 Who Talks TCP?

This RFC is a survey of hosts to identify the implementation status of Telnet, FTP, and Mail on TCP. The list of hosts was

taken from the NIC hostname table of 20-Dec-82. The tests were run on 4-Jan-83 through 5-Jan-83.

835 Smallberg Dec 82 Who Talks TCP?

This RFC is a survey of hosts to identify the implementation status of Telnet, FTP, and Mail on TCP. The list of hosts was taken from the NIC hostname table of 2-Dec-82. The tests were run on 28-Dec-82 through 5-Jan-83.

834 Smallberg Dec 82 Who Talks TCP?

This RFC is a survey of hosts to identify the implementation status of Telnet, FTP, and Mail on TCP. The list of hosts was taken from the NIC hostname table of 2-Dec-82. The tests were run on 22-Dec-82.

833 Smallberg Dec 82 Who Talks TCP?

This RFC is a survey of hosts to identify the implementation status of Telnet, FTP, and Mail on TCP. The list of hosts was taken from the NIC hostname table of 2-Dec-82. The tests were run on 14-Dec-82.

832 Smallberg Dec 82 Who Talks TCP?

This RFC is a survey of hosts to identify the implementation status of Telnet, FTP, and Mail on TCP. The list of hosts was taken from the NIC hostname table of 2-Dec-82. The tests were run on 7-Dec-82.

831 Braden Dec 82 Backup Access to the European Side of SATNET

The purpose of this RFC is to focus discussion on a particular Internet problem: a backup path for software maintenance of the European sector of the Internet, for use when SATNET is partitioned. We propose a mechanism, based upon the Source Routing option of IP, to reach European Internet sites via the VAN Gateway and UCL. This proposal is not intended as a standard at this time.

830 Zaw-Sing Su Oct 82 A Distributed System for Internet Name Service

This RFC proposes a distributed name service for ARPA-Internet. Its purpose is to focus discussion on the subject. It is hoped that a general consensus will emerge leading eventually to the adoption of standards.

829 Cerf Oct 82 Packet Satellite Technology Reference Sources

This RFC describes briefly the packet satellite technology developed by the Defense Advanced Research Projects Agency and several other participating organizations in the U.K. and Norway and provides a bibliography of relevant papers for researchers interested in experimental and operational experience with this dynamic satellite-sharing technique.

828 Owen Aug 82 Data Communications: IFIP's International "Network" of Experts

This RFC is distributed to inform the ARPA-Internet community of the activities of the IFIP technical committee on Data Communications, and to encourage participation in those activities.

827 Rosen Oct 82 Exterior Gateway Protocol (EGP)

This RFC is proposed to establish a standard for Gateway to Gateway procedures that allow the Gateways to be mutually suspicious. This document is a DRAFT for that standard. Your comments are strongly encouraged.

826 Plummer Nov 82 An Ethernet Address Resolution Protocol

The purpose of this RFC is to present a method of Converting Protocol Addresses (e.g., IP addresses) to Local Network Addresses (e.g., Ethernet addresses). This is an issue of general concern in the ARPA-Internet Community at this time. The method proposed here is presented for your consideration and comment. This is not the specification of an ARPA-Internet Standard.

825 Postel Nov 82 Request for Comments on Requests for Comments

This RFC is intended to clarify the status of RFCs and to provide some guidance for the authors of RFCs in the future. It is in a sense a specification for RFCs.

824 MacGregor Aug 82 The Cronus Virtual Local Network

The purpose of this note is to describe the CRONUS Virtual Local Network, especially the addressing related features. These features include a method for mapping between Internet Addresses and Local Network addresses. This is a topic of current concern in the ARPA-Internet community. This note is intended to

stimulate discussion. This is not a specification of an ARPA-Internet Standard.

823 Hinden Sep 82 The DARPA Internet Gateway

This RFC is a status report on the Internet Gateway developed by BBN. It describes the Internet Gateway as of September 1982. This memo presents detailed descriptions of message formats and gateway procedures, however, this is not an implementation specification, and such details are subject to change.

822 Crocker Aug 82 Standard for the Format of ARPA Internet Text Messages

This document revises the specifications in RFC 733, in order to serve the needs of the larger and more complex ARPA-Internet. Some of RFC 733's features failed to gain adequate acceptance. In order to simplify the standard and the software that follows it, these features have been removed. A different addressing scheme is used, to handle the case of internetwork mail; and the concept of re-transmission has been introduced. Obsoletes RFC 733, NIC 41952.

821 Postel Aug 82 Simple Mail Transfer Protocol

The objective of Simple Mail Transfer Protocol (SMTP) is to transfer mail reliably and efficiently. SMTP is independent of the particular transmission subsystem and requires only a reliable ordered data stream channel. Obsoletes RFCs 788, 780, 772.

820 Postel Jan 82 Assigned Numbers

This RFC is is replaced by RFCs 997 and 990.

819 Zaw-Sing Su Aug 82 The Domain Naming Convention for Internet User Applications

This RFC is an attempt to clarify the generalization of the Domain Naming Convention, the Internet Naming Convention, and to explore the implications of its adoption for ARPA-Internet name service and user applications.

818 Postel Nov 82 The Remote User Telnet Service

This RFC is the specification of an application protocol. Any host that implements this application level service must follow this protocol.

817 Clark Jul 82 Modularity and Efficiency in Protocol Implementation

This RFC will discuss some of the commonly encountered reasons why protocol implementations seem to run slowly.

816 Clark Jul 82 Fault Isolation and Recovery

This RFC describes the portion of fault isolation and recovery which is the responsibility of the host.

815 Clark Jul 82 IP Datagram Reassembly Algorithms

This RFC describes an alternate approach of dealing with reassembly which reduces the bookkeeping problem to a minimum, and requires only one buffer for storage equal in size to the final datagram being reassembled, which can reassemble a datagram from any number of fragments arriving in any order with any possible pattern of overlap and duplication, and which is appropriate for almost any sort of operating system.

814 Clark Jul 82 Name, Addresses, Ports, and Routes

This RFC gives suggestions and guidance for the design of the tables and algorithms necessary to keep track of these various sorts of identifiers inside a host implementation of TCP/IP.

813 Clark Jul 82 Window and Acknowledgement Strategy in TCP

This RFC describes implementation strategies to deal with two mechanisms in TCP, the window and the acknowledgement. It also presents a particular set of algorithms which have received testing in the field, and which appear to work properly with each other. With more experience, these algorithms may become part of the formal specification, until such time their use is recommended.

812 Harrenstien Mar 82 NICNAME/WHOIS

This RFC gives a description of what the NICNAME/WHOIS Server is and how to access it. This server together with the corresponding Identification Data Base provides online directory look-up equivalent to the ARPANET Directory.

811 Harrenstien Mar 82 Hostnames Server

This RFC gives a description of what the Hostnames Server is and how to access it. The function of this particular server is to deliver machine-readable name/address information describing networks, gateways, hosts, and eventually domains, within the Internet environment.

810 Feinler Mar 82 DoD Internet Host Table Specification

This RFC specifies a new host table format applicable to both ARPANET and Internet needs. In addition to host name to host address translation and selected protocol information, we have also included network and gateway name to address correspondence, and host operating system information. This RFC obsoletes the host table described in RFC 608.

809 Chang Feb 82 UCL Facsimile System

This RFC describes the features of the computerised facsimile system developed in the Department of Computer Science at UCL. First its functions are considered and the related experimental work are reported. Then the disciplines for system design are discussed. Finally, the implementation of the system are described, while detailed description are given as appendices.

808 Postel Mar 82 Summary of Computer Mail Services Meeting Held at BBN on 10 January 1979

This RFC is a very belated attempt to document a meeting that was held three years earlier to discuss the state of computer mail in the ARPA community and to reach some conclusions to guide the further development of computer mail systems such that a coherent total mail service would continue to be provided.

807 Postel Feb 82 Multimedia Mail Meeting Notes

This RFC consists of notes from a meeting held at USC/Information Sciences Institute on the 12th of January to discuss common interests in multimedia computer mail issues and to agree on some specific initial experiments.

806 NBS Sep 81 Specification for Message Format for Computer Based Message Systems

This RFC deals with Computer Based Message systems which provides a basis for interaction between different CBMS by defining the

format of messages passed between them. This RFC is replaced by RFC 841.

805 Postel Feb 82 Computer Mail Meeting Notes

This RFC consists of notes from a meeting that was held at USC/Information Sciences Institute on 11 January 1982, to discuss addressing issues in computer mail. The major conclusion reached at the meeting is to extend the "username@hostname" mailbox format to "username@host.domain", where the domain itself can be further structured.

804 CCITT Jan 82 CCITT Draft Recommendation T.4

This is the CCITT standard for group 3 facsimile encoding. This is useful for data compression of bit map data.

803 Agarwal Nov 81 Dacom 450/500 Facsimile Data Transcoding

The first part of this RFC describes in detail the Dacom 450 data compression algorithms and is an update and correction to an earlier memorandum. The second part of this RFC describes briefly the Dacom 500 data compression algorithm as used by the INTELPOST electronic-mail network under development by the US Postal Service and several foreign administrators.

802 Malis Nov 81 The ARPANET 1822L Host Access Protocol

This document proposed two major changes to the current ARPANET host access protocol. The first change will allow hosts to use logical addressing (i.e., host addresses that are independent of their physical location on the ARPANET) to communicate with each other, and the second will allow a host to shorten the amount of time that it may be blocked by its IMP after it presents a message to the network (currently, the IMP can block further input from a host for up to 15 seconds). See RFCs 852 and 851.

801 Postel Nov 81 NCP/TCP Transition Plan

This RFC discusses the conversion of hosts from NCP to TCP. And making available the principle services: Telnet, File Transfer, and Mail. These protocols allow all hosts in the ARPA community to share a common interprocess communication environment.

800 Postel Nov 82 Requests for Comments Summary

This RFC is a slightly annotated list of the 100 RFCs from RFC 700 through RFC 799. This is a status report on these RFCs.

799 Mills Sep 81 Internet Name Domains

This document suggests that, as the Internet grows, the space of host names cannot remain a flat space of globally unique names, therefore a hierarchy of name domains must be introduced; see also RFC 822.

798 Katz Sep 81 Decoding Facsimile Data From the Rapicom 450

A description of the encoding/decoding procedure for Rapicom 450 facsimile machine.

797 Katz Sep 81 Format for Bitmap Files

The description of a simple file format for bitmap data.

796 Postel Sep 81 Address Mappings

A description of the way the addresses of a few actual networks are mapped into internet addresses.

795 Postel Sep 81 Service Mappings

A description of how the internet type of service is mapped into the actual service parameters of a few particular networks, and vice versa.

794 Cerf Sep 81 Pre-Emption

Discusses how pre-emption of TCP connection can be implemented. Replaces IEN 125.

793 Postel Sep 81 Transmission Control Protocol

The specification of TCP. Replaces RFCs 761 and 675.

792 Postel Sep 81 Internet Control Message Protocol

The specification of ICMP. Replaces RFCs 777 and 760.

791 Postel Sep 81 Internet Protocol

An updated specification of IP. Replaces RFC 760.

790 Postel Sep 81 Assigned Numbers

The RFC is replaced by RFCs 997 and 990.

789 Rosen Jul 81 Vulnerabilities of Network Control Protocols: An Example

A description of an outage in ARPANET service and the process of determining the cause; also, subtleties of designing network protocols.

788 Postel Nov 81 Simple Mail Transfer Protocol

An old version; see RFC 821.

787 Chapin Jul 81 Connectionless Data Transmission Survey/Tutorial

A discussion of datagram service. Intended for submission to international standards bodies.

786 Sluizer Jul 81 Mail Transfer Protocol: ISI TOPS-20 MTP-NIMAIL Interface

The description of the way mail is passed between the MTP and the NIMAIL programs in ISI TOPS-20. Outdated.

785 Sluizer Jul 81 Mail Transfer Protocol: ISI TOPS-20 File Definitions

The description of the file format for passing mail to the MTP program from user mail programs in ISI TOPS-20. Outdated.

784 Sluizer Jul 81 Mail Transfer Protocol: ISI TOPS-20 Implementation

The description of the program structure for the MTP implementation in the ISI TOPS-20. Outdated.

783 Sollins Jun 81 The TFTP Protocol Revision 2

The specification of TFTP. Replaces RFCs 768, 764 and IEN 133.

782 Nabielsky undated A Virtual Terminal Management Model

A description of the elements of a virtual terminal and the management of communications between them.

781 Su May 81 A Specification of the Internet Protocol IP Timestamp Option

The description of IP Timestamp option, now included in the IP specification (RFC 791).

780 Sluizer May 81 Mail Transfer Protocol

An outdated Mail protocol; see RFC 821.

779 Killian Apr 81 Telnet Send-Location Option

Definition of this Telnet option.

778 Mills Apr 81 DCNet Internet Clock Service

Specifies a format and procedure for the exchange of messages to maintain synchronized clocks.

777 Postel Apr 81 Internet Control Message Protocol

An old version; see RFC 792.

776 Postel Jan 81 Assigned Numbers

This RFC has been replaced by RFCs 997 and 990.

775 Mankins Dec 80 Directory Oriented FTP Commands

The definition of additional FTP Commands related to directory management.

774 Postel Oct 80 Internet Protocol Handbook Table of Contents

An out-of-date table of contents for an Internet Protocol Handbook.

773 Cerf Oct 80 Comments on NCP/TCP Mail Service Transition Strategy

A discussion of issues in the transition from NCP to TCP, particularly as related to MAIL Service.

772 Sluizer Sep 80 Mail Transfer Protocol

An old version of a Mail Protocol; see RFC 821.

771 Cerf Sep 80 Mail Transition Plan

A plan for supporting mail service in the transition from NCP to TCP; see also RFC 801.

770 Postel Sep 80 Assigned Numbers

This RFC has been replaced by RFCs 997 and 990.

769 Postel Sep 80 Rapicom 450 Facsimile File Format

The definition of the exchange format of the encoded facsimile data of the Rapicom 450; see also RFC 798.

768 Postel Aug 80 User Datagram Protocol

The specification of the UDP.

767 Postel Aug 80 A Structured Format for Transmission of Multi-Media Documents

The definition of the format for the document of a multimedia message.

766 Postel Jul 80 Internet Protocol Handbook

An out-of-date table of contents for the Internet Protocol Handbook.

765 Postel Jun 80 File Transfer Protocol Specification

The specification of FTP.

764 Postel Jun 80 Telnet Protocol Specification

The specification of Telnet.

763 Abrams May 80 Role Mailboxes

A call for mailboxes with role names, such as "Management".

762 Postel Jan 80 Assigned Numbers

This RFC has been replaced by RFCs 997 and 990.

761 Postel Jan 80 DOD Standard Transmission Protocol

An old version; see RFC 793.

760 Postel Jan 80 DOD Standard Internet Protocol

An old version; see RFC 791.

759 Postel Aug 80 Internet Message Protocol

The definition of the protocol and format for the exchange of multimedia mail. Replaces RFC 753.

758 Postel Aug 79 Assigned Numbers

This RFC has been replaced by RFCs 997 and 990.

757 Deutsch Sep 79 A Suggested Solution to the Naming, Addressing, and Delivery Problem for ARPANET Message Systems

Discusses several proposals for handing the name to address to route processing for computer mail. Favors a solution based on unique-ids and a data base, see also RFCs 759, 821 and 822.

756 Pickens Jul 79 The NIC Name server--A Datagram-Based Information Utility

Describes a Host Name to Address look up service.

755 Postel May 79 Assigned Numbers

This RFC has been replaced by RFCs 997 and 990.

754 Postel Apr 79 Out-of-Net Host Addresses for Mail

A discussion of options for addressing computer mail beyond the ARPANET.

753 Postel Mar 79 Internet Message Protocol

An old version; see RFC 759.

752 Crispin Jan 79 A Universal Host Table

Describes the host table used at MIT and Stanford. This has several extensions and generalizations from the NIC standard and the table used by most Tenex and TOPS20 hosts.

751 Lebling Dec 78 Survey of FTP Mail and MLFL

A survey of hosts' responses to probes of their FTP servers to see if servers (a) accept mail for unknown users and (b) support the MAIL and MLFL commands.

750 Postel Sep 78 Assigned Numbers

This RFC has been replaced by RFCs 997 and 990.

749 Greenberg Sep 78 Telnet SUPDUP-OUTPUT Option

Updates RFC 736; see also RFCs 734, 746, and 747.

748 Crispin Apr 78 Telnet Randomly-Lose Option

Defines this Telnet option (note the date of this memo).

747 Crispin Mar 78 Recent Extensions to the SUPDUP Protocol

An update to the SUPDUP protocol (RFC 734); see also RFCs 749, 746 and 736.

746 Stallman Mar 78 The SUPDUP Graphics Extension

An extension of SUPDUP for Graphics; see also RFCs 734, 736, 747 and 749.

745 Beeler Mar 78 JANUS Interface Specifications

The specification of a symmetrical 1822 style interface.

744 Sattley Jan 78 MARS - A Message Archiving and Retrieval Service

The description of a database service for computer mail messages, which operates via computer mail.

543 Harrenstien Dec 77 FTP Extension: XRSQ/XRCP

An extension to FTP mail to allow more efficient transmission of computer mail. Now incorporated into SMTP; see RFC788.

742 Harrenstien Dec 77 NAME/FINGER Protocol

Defines the Name or Finger Protocol which allows one to get "who is on" or "where is user x" information from another host.

741 Cohen Nov 77 Specifications for the Network Voice Protocol NVP

Defines the protocol used in the ARPANET packet speech experiments. Replaced by NVP-II and ST for Internet packet speech experiments. ST is documented in ISN 119; NVP-II is documented in an ISI Internal memo.

740 Braden Nov 77 NETRJS Protocol

Defines the protocol used for Remote Job Entry on the UCLA CCN IBM system; replaces RFCs 599 and 189.

739 Postel Nov 77 Assigned Numbers

This RFC has been replaced by RFCs 997 and 990.

738 Harrenstien Oct 77 Time Server

Defines the Time Server Protocol; see IEN 142 for the TCP and VDP versions.

737 Harrenstien Oct 77 FTP Extension: XSEN

An extension to the Mail procedures. This function is incorporated in the SMTP; see also RFC 821.

736 Crispin Oct 77 Telnet SUPDUP Option

Defines the procedure for negotiating to use the SUPDUP, protocol as a Telnet option; see also RFCs 734, 746, 747 and 749.

735 Crocker Nov 77 Revised Telnet Byte Macro Option

Defines a Telnet option for assigning codes to stand for strings in Telnet connections. Replaces RFC 729. Obsoletes NIC 40306.

734 Crispin Oct 77 SUPDUP Protocol

Description of a terminal control protocol used at Stanford and MIT; see also RFCs 736, 746-749.

733 Crocker Nov 77 Standard for the Format of ARPA Network Text Messages

Specification of the format for the headers of computer mail. An old version; see RFC 822.

732 Day Sep 77 Telnet Data Entry Terminal Option

The specification of a Telnet Option for the control of a data entry display terminal. Replaces RFC 731.

731 Day Jun 77 Telnet Data Entry Terminal Option

An old version; see RFC 732.

730 Postel May 77 Extensible Field Addressing

Discusses some ideas on addressing that come up in the context of changing from 8-bit to 24-bit network addresses.

729 Crocker May 77 Telnet Byte Macro Option

An old version; see RFC 735.

728 Day Apr 77 A Minor Pitfall in the Telnet Protocol

This RFC warns of the possibility of an unexpected occurence in Telnet resulting from the interaction between option subnegotiations and the Telnet SYNCH operation.

727 Crispin Apr 77 Telnet Logout Option

Defines a Telnet option for causing a logout.

726 Postel Mar 77 Remote Controlled Transmission and Echoing Telnet Option

Defines a Telnet option for controlling the transmission and echoing of data to smooth the response to use in high transmission delay environments; see also RFCs 719 and 718.

725 Day Mar 77 An RJE Protocol for a Resource Sharing Network

Describes a possible Remote Job Entry protocol.

724 Crocker May 77 Proposed Official Standard for the Format of ARPA Network Messages

An old version; see RFC 822.

723 Never Issued.

722 Haverty Sep 76 Thoughts on Interactions in Distributed Services

A discussion on the design of interactive distributed services and the kinds of primitive operations that are needed.

721 Garlick Sep 76 Out of Band Control Signals in a Host to Host Protocol

A discussion of the control signals in transport protocols (e.g., NCP's Interrupt or TCP's Urgent).

720 Crocker Aug 76 Address Specification Syntax for Network Mail

A discussion of computer mail addresses, with comments on real names vs. mailboxes, and mailing lists; see also RFC 819.

719 Postel Jul 76 Discussion on RCTE

A short discussion of RCTE implementation issues; see also RFCs 726 and 718.

718 Postel Jun 76 Comments on RCTE from the Tenex Implementation Experience

A short note on the Tenex implementation of RCTE; see also RFCs 726 and 719.

717 Postel Jul 76 Assigned Network Numbers

This RFC has been replaced by RFC 997 and 990.

716 Levin May 76 Interim Revision to Appendix F of BBN 1822

A short note updating the specification of the Very Distant Host 1822 interface.

715 Never Issued.

714 McKenzie Apr 76 A Host/Host Protocol for an ARPANET-type Network

A specification of a NCP-like protocol for an ARPA-like network. Interesting to compare to the NCP specification to see what the author would do differently.

713 Haverty Apr 76 MSDTP -- Message Services Data Transmission Protocol

The specification of a set of Data Primitives for building interactive services.

712 Donnelley Feb 76 A Distributed Capability Computing System DCCS

A description of a Distributed Capability based computing system.

711 Never Issued.

710 Never Issued.

709 Never Issued.

708 White Jan 76 Elements of a Distributed Programming System

A description of a distributed programming system; see also RFC 707.

707 White Dec 75 A High-Level Framework for Network-Based Resource Sharing

A description of a programming environment for network-based programs; see also RFC 708.

706 Postel Nov 75 On the Junk Mail Problem

A short note pointing out that the ARPANET maybe subject to a "denial of service" attack by a misbehaving host.

705 Bryan Nov 75 Front-End Protocol

This RFC describes a protocol used between a PDP-11 (the ARPANET front end) and a B6700 to support network communication.

704 Santos Sep 75 IMP/Host and Host/IMP Protocol Change

Describes the changes to the 1822 interface to eliminate the restriction of 63 IMPs.

703 Dodds Jul 75 Survey of New-Protocol Telnet Servers

A poll of Telnet servers to check implementation status and Telnet options. Updates RFCs 702, 701, 679 and 669.

702 Dodds Sep 74 Survey of New-Protocol Telnet Servers

An earlier poll of Telnet server implementation status; see also RFC's703, 701, 679, and 669.

701 Dodds Aug 74 Survey of New-Protocol Telnet Servers

An earlier poll of Telnet server implementation status; see also RFCs 703, 702, 679 and 669.

700 Mader Aug 74 A Protocol Experiment

Describes a protocol based loosely on a very early version of TCP, used to send data to a printer server.

699 Postel Nov 82 Requests for Comments Summary Notes: 600-699

A summary of the Request for Comments documents from RFC 600-699.

698 Tovar Jul 75 Telnet Extended ASCII Option

Describes an option to allow transmission of a special kind of extended ASCII used at the Stanford AI and MIT AI Labs.

697 Lieb Jul 75 CWD Command of FTP

Discusses FTP login access to "files only" directories.

696 Cerf Jul 75 Comments on the IMP/HOST and HOST/IMP Protocol Changes

Observations on current international standards recommendations from IFIP working group 6.1; see also RFCs 692, 690 687.

695 Krilanovich Jul 75 Official Change in Host-Host Protocol

Corrects an ambiguity concerning the ERR command; changes NIC 8246 and NIC 7104.

694 Postel Jun 75 Protocol Information

This RFC has been replaced by RFC 991.

693 Never Issued.

692 Wolfe Jun 75 Comments on IMP/Host Protocol Changes

A proposed solution to the problem of combined length of IMP and Host leaders; see also RFCs 696, 690 and 687.

691 Harvey May 75 One More Try on the FTP

A slight revision of RFC 686, regarding the subject of print files; see also RFCs 640, 630, 542, 454, 448, 414, 385 and 354.

690 Postel Jun 75 Comments on the Proposed Host/IMP Protocol Changes

Comments on suggestions in RFC 687; see also RFCs 692 and 696.

689 Clements May 75 Tenex NCP Finite State Machine for Connections

Describes the internal states of an NCP connection in the Tenex implementation.

688 Walden Jun 75 Tentative Schedule for the New Telnet Implementation for the TIP

687 Walden Jun 75 IMP/Host and Host/IMP Protocol Changes

This RFC discusses addressing hosts on more than 63 IMPs, and other backwards compatible expansions; see also RFCs 690 and 692.

686 Harvey May 75 Leaving Well Enough Alone

Discusses the difference between early and later versions of FTP; see also RFCs 691, 640, 630, 542, 454, 448, 414, 385 and 354.

685 Beeler Apr 75 Response Time in Cross-network Debugging

This memo discusses the contribution of ARPANET communication to response time.

684 Schantz Apr 75 A Commentary on Procedure Calling as a Network Protocol

Describes issues in designing distributed computing systems. Shortcomings of RFC 674; see also RFCs 542 and 354.

683 Clements Apr 75 FTPSRV -- Tenex Extension for Paged Files

Defines an extension to FTP for page-mode transfers between Tenex systems; also discusses file transfer reliability.

682 Never Issued.

681 Holmgren May 75 Network Unix

Capabilities as an ARPANET Mini-Host: standard I/O, Telnet, NCP, Hardware/Software requirements, reliability, availability.

680 Myer Apr 75 Message Transmission Protocol

Extends message field definition beyond RFC 561 attempts to establish syntactic and semantic standards for ARPANET; see also RFCs 733 and 822.

679 Dodds Feb 75 February, 1975, Survey of New-Protocol Telnet Servers

An earlier poll of Telnet server implementation status. Updates RFCs 701, 702 and 669; see also RFC 703.

678 Postel Dec 74 Standard File Formats

For transmission of documents across different environments.

677 Johnson Jan 75 The Maintenance of Duplicate Databases

676 Never Issued.

675 Cerf Dec 74 Specification of Internet Transmission Control Program (TCP)

The first detailed specification of TCP; see RFC 793.

674 Postel Dec 74 Procedure Call Documents--Version 2

A host level protocol used in the NSW--a slightly constrained version of ARPANET Host-to-Host protocol, affecting allocation, RFNM wait, and retransmission; see also RFC 684.

673 Never Issued.

672 Schantz Dec 74 A Multi-Site Data Collection Facility

Applicability of TIP/Tenex protocols beyond TIP accounting.

671 Schantz Dec 74 A Note on Reconnection Protocol

Experience with implementation in RSEXEC context.

670 Never Issued.

669 Dodds Dec 74 November 1974, Survey of New-Protocol Telnet Servers

An earlier poll of Telnet server implementation status. Updates RFC 702; see also RFCs 703 and 679.

668 Never Issued.

667 Chipman Dec 74 BBN Host Ports

Approved scheme to connect host ports to the network.

666 Padlipsky Nov 74 Specification of the Unified User-Level Protocol

Discusses and proposes a common command language.

665 Never Issued.

664 Never Issued.

663 Kanodia Nov 74 A Lost Message Detection and Recovery Protocol

Proposed extension of host-host protocol; see also RFCs 534, 516, 512, 492 and 467.

662 Kanodia Nov 74 Performance Improvement in ARPANET File Transfers from Multics

Experimenting with host output buffers to improve throughput.

661 Postel Nov 74 Protocol Information

This RFC has been replaced by RFC 991.

660 Walden Oct 74 Some Changes to the IMP and the IMP/Host Interface

Decoupling of message number sequences of hosts; host-host access control; message number window; messages outside normal mechanism; see also BBN 1822.

659 Postel Oct 74 Announcing Additional Telnet Options

Options defined in RFCs 651-658.

658 Crocker Oct 74 Telnet Output Line Feed Disposition

Defines a Telnet option for specific control of Line Feed.

657 Crocker Oct 74 Telnet Output Vertical Tab Disposition Option

Defines a Telnet option for specific control of Vertical Tab.

656 Crocker Oct 74 Telnet Output Vertical Tab Stops Option

Defines a Telnet option for setting the stops for Vertical Tab.

655 Crocker Oct 74 Telnet Output Form Feed Disposition Option

Defines a Telnet option for specific control of Form Feed.

654 Crocker Oct 74 Telnet Output Horizontal Tab Disposition Option

Defines a Telnet option for specific control of Horizontal Tab.

653 Crocker Oct 74 Telnet Output Horizontal Tab Stops Option

Defines a Telnet option for setting the stops for Horizontal Tab.

652 Crocker Oct 74 Telnet Output Carriage Return Disposition Option

Defines a Telnet option for specific control of Carriage Return.

651 Crocker Oct 74 Revised Telnet Status Option

Revises the Telnet Option for communicating the status of all Telnet options over the network.

650 Never Issued.

649 Never Issued.

648 Never Issued.

647 Padlipsky Nov 74 A Proposed Protocol for Connecting Host Computers to ARPA-Like Networks via Front End Processors

Approaches to Front-End protocol processing using available hardware and software.

646 Never Issued.

645 Crocker Jun 74 Network Standard Data Specification Syntax

Providing a mechanism for specifying all attributes of a collection of bits; see also RFC 615.

644 Thomas Jul 74 On The Problem of Signature Authentication for Network Mail

Proposes that the mail sender be an authorized system process and that the mail sender and mail receiver processes exchange a password. The sender process takes responsibility for authentication of the signature on the mail.

643 Mader Jul 74 Network Debugging Protocol

To be used in an implementation of a PDP-11 network bootstrap device and a cross-network debugger.

642 Burchfiel Jul 74 Ready Line Philosophy and Implementation

641 Never Issued.

640 Postel Jun 74 Revised FTP Reply Codes

Updates RFC 542.

639 Never Issued.

638 McKenzie Apr 74 IMP/TIP Preventive Maintenance Schedule

Corrects RFC 633.

637 McKenzie Apr 74 Change of Network Address for SU-DSL

A host at Stanford changes its address from 2/2 to 2/3.

636 Burchfiel Jun 74 TIP/TENEX Reliability Improvements

Obtaining/maintaining connections; recovery from lost connections; connection-state changes.

635 Cerf Apr 74 An Assessment of ARPANET Protocols

Theoretical and practical motivation for redesign. Multipacket messages; host retransmission; duplicate detection; sequencing; acknowledgement.

634 McKenzie Apr 74 Change in Network Address for Haskins Lab.

A host a Haskins Lab changes its address from 5/3 to 9/3.

633 McKenzie Mar 74 IMP/TIP Preventive Maintenance Schedule

An old version; see RFC 638.

632 Opderbeck May 74 Throughput Degradations for Single Packet Messages

A study of packet throughput.

631 Danthine Apr 74 Call for Papers: International Meeting on Minicomputers and Data Communication

A meeting on data communications held January 1975 in Liege, Belgium.

630 Sussman Apr 74 FTP Error Code Usage for More Reliable Mail Service

Describes FTP reply-code usage in TENEX mail processing.

629 North Mar 74 Scenario for Using the Network Journal

An example of how to access information in the NIC's Journal database.

628 Keeney Mar 74 Status of RFC Numbers and a Note on Pre-assigned Journal Numbers

A method for getting the next RFC number to use on a new memo.

627 Feinler Mar 74 ASCII Text File of Hostnames

See also RFCs 606, 608, 623 and 625.

626 Kleinrock Mar 74 On a possible Lockup Condition in IMP Subnet due to Message Sequencing

A potential problem in the IMP processing of messages. A detailed description of how this condition can arise.

625 Feinler Mar 74 On Line Hostnames Service

See also RFCs 606, 608, 623 and 627.

624 Krilanovich Feb 74 Comments on the File Transfer Protocol

Design changes and slight modifications. Replaces RFC 607; see also RFCs 614, 542 and 640.

623 Krilanovich Feb 74 Comments on On-Line Host Name Service

See also RFCs 627, 625, 608 and 606.

622 McKenzie Mar 74 Scheduling IMP/TIP Down Time

Modification of previous policy.

621 Kudlick Mar 74 NIC User Directories at SRI-ARC

Changes in user accounts at the NIC.

620 Ferguson Mar 74 Request for Monitor Host Table Updates

Changes in the hosts Office-1 and SRI-ARC.

619 Naylor Mar 74 Mean Round-Trip Times in the ARPANET

Actual measurements of round-trip times.

618 Taft Feb 74 A Few Observations on NCP Statistics

Distribution of NCP and IMP message types by actual measurement.

617 Taft Feb 74 A Note on Socket Number Assignment

Danger of imposing more fixed socket number requirements; see also RFCs 542, 503 and 451.

616 Walden Feb 74 Latest Network Maps

Geographic ad Topologic maps of the ARPANET of January 1974.

615 Crocker Mar 74 Proposed Network Standard Data Pathname Syntax

A suggestion for a network wide standard for naming data (such as files).

614 Pogran Jan 74 Response to RFC 607 (NIC-21255), "Comments on the FTP"

See also RFCs 624, 542 and 640.

613 McKenzie Jan 74 Network Connectivity: A Response to RFC 603

Remarks about connectivity and robustness of networks.

612 McKenzie Jan 74 Traffic Statistics

A report on Host traffic statistics for the month of December 1973. Updates RFC 601.

611 Walden Feb 74 Two Changes to the IMP/Host Protocol

Expansion of Host-Going-Down and addition of Dead-Host-Status Message.

610 Winter Dec 73 Further Datalanguage Design Concepts

Preliminary results of the language design; a model for data languagea semantics; future considerations.

609 Ferguson Jan 74 Statement of Upcoming Move of NIC/NLS Service

See also RFCs 621 and 620.

608 Feinler Jan 73 Host Names On-Line

Response to RFC 606; see also RFCs 627, 625 and 623.

607 Krilanovich Jan 73 NIC-21255 Comments on the File Transfer Protocol

An old version; see RFC 624; see also RFCs 614, 542 and 640.

606 Deutsch Dec 73 Host Names On-Line

Resolving differences in hostname-address mappings; see also RFCs 627, 625, 623 and 608.

605 Never Issued.

604 Postel Dec 73 Assigned Link Numbers

Modifies official host-host protocol. Replaced by RFCs 997 and 990.

603 Burchfiel Dec 73 Response to RFC 597: Host Status

Questions about the ARPANET topology described in RFC 597.

602 Metcalfe Dec 73 "The Stockings Were Hung by the Chimney With Care"

Susceptibility of ARPANET to security violations.

601 McKenzie Dec 73 Traffic Statistics

A report on Host traffic statistics for the month of November 1973. Updates RFC 586.

600 Berggreen Nov 73 Interfacing an Illinois Plasma Terminal to the ARPANET

Discusses plans to map Plato terminal codes to network ASCII for accessing the Plato system via the network using Telnet.

599 Braden Dec 73 Update on NETRJS

A status report and update on UCLA-CCN's remote job entry service.

598 NICSTA Dec 73 RFC Index - December 5, 1973

Lists RFCs 1-593.

597 Neigus Dec 73 Host Status

This RFC provides the most current network maps, geographic and logical, plus a list of hosts connected to the ARPANET.

596 Taft Dec 73 Second Thoughts on Telnet Go-Ahead

Cited objections to the requirement that hosts implement the Telnet Go-Ahead (GA) command, as specified in the Telnet Protocol Specification.

595 Hathaway Dec 73 Some Thoughts in Defense of the Telnet Go-Ahead

This RFC is in reply to RFC 596.

594 Burchfiel Dec 73 Speedup of Host-IMP Interface

A discussion on how to make the full performance capabilities of the subnet available for interprocess communication.

593 McKenzie Nov 73 Telnet and FTP Implementation Schedule Change

592 Watson Nov 73 Some Thoughts on System Design to Facilitate Resource Sharing

Proposes a system interconnection approach which would help in moving toward more resource sharing on the ARPANET.

591 Walden Nov 73 Addition to the Very Distant Host Specification

A sentence correction notation that should be inserted in Appendix F of BBN Report 1822.

590 Padlipsky Nov 73 MULTICS Address Change

Announcement of a plan to change the address of MIT Multics.

589 Braden Nov 73 CCN NETRJS Server Messages to Remote User

Describes the system to user messages at UCLA-CCN's remote job entry service.

588 Stokes Oct 73 London Node is now up

Notice that an ARPANET node is operational at University College, London.

587 Postel Nov 73 Announcing New Telnet Options

Announcement of Negotiate About Output Line Width (NAOL), and Negotiate About Output Page Size (NAOP).

586 McKenzie Nov 73 Traffic Statistics

A report on the Host traffic statistics for the month of October 1973. Updates RFC 579.

585 Crocker Nov 73 ARPANET Users Interest Working Group Meeting

Meeting notes of the first Users Interest Working Group.

584 Iseli Nov 73 Charter for ARPANET Users Interest Working Group

Describes the background, membership, and scope of the newly formed Users Interest Working Group.

583 Never Issued.

582 Clements Nov 73 Comments on RFC 580 - Machine Readable Protocols

Cites objections to the phrase "preferably NLS files".

581 Crocker Nov 73 Corrections to RFC 560 - Remote Controlled Transmission and Echoing Telnet Option

This RFC contains corrections to RFC 560, which described the Remote Controlled Transmission and Echoing Telnet Option.

580 Postel Oct 73 Note to Protocol Designers and Implementers

An announcement that future proposed protocols shall be submitted in the form of on-line documents, preferably in NLS files, to the Network Information Center.

579 McKenzie Oct 73 Traffic Statistics

A report on the Host traffic statistics for the month of September 1973. Updates RFC 566.

578 Bhushan Oct 73 Using MIT-MATHLAB MACSYMA From MIT-DMS Muddle - An Experiment in Automated Resource Sharing

This paper describes an experiment in non-trivial automated resource sharing between dissimilar systems. The goal of this experiment was to interface the Muddle system at MIT-DMS to the MACSYMA system at MIT-Mathlab.

577 Crocker Oct 73 Mail Priority

A paper that suggests interpretations for urgency values, based on arguments presented in RFC 555. References RFC 539.

576 Victor Sep 73 Proposal for Modifying Linking

This RFC presents a plan to modify the link jsys in Tenex to work in a better way in terms of the user interface.

575 Never Issued.

574 Krilanovich Sep 73 Announcement of a Mail Facility at UCSB

An announcement of a server program which supports that subset of the File Transfer Protocol necessary for mail delivery.

573 Bhushan Sep 73 Data and File Transfer - Some Measurement Results

A report on the results of the performance of MIT-DM's FTP-user and FTP-server programs.

572 Never Issued.

571 Braden Nov 73 Tenex FTP Problem

A report on a problem in the current Tenex implementation which is likely to cause incorrect results when transferring files to a non-Tenex site.

570 Pickens Oct 73 Experimental Input Mapping Between NVT ASCII and UCSB Online System

This RFC updates RFC 216. This document describes the proposed solutions from the requests to improve the human interface to the UCSB On-Line System.

569 Padlipsky Oct 73 NETED: A Common Editor for the ARPA Network

Defines a simple line style text editor and suggests that it be made available on every host in the network.

568 McQuillan Sep 73 Response to RFC 567 - Cross-Country Network Bandwidth

This RFC serves as a brief correction to several fundamental errors in RFC 567.

567 Deutsch Sep 73 Cross-Country Network Bandwidth

Computation of cross-country network bandwidth.

566 McKenzie Sep 73 Traffic Statistics

A report on the Host traffic statistics for the month of August 1973. Updates RFC 556.

565 Cantor Aug 73 Storing Network Survey Data at the Datacomputer

A project summary report describing the programs developed and implemented that have been operating successfully with the datacomputer since July 10.

564 Never Issued.

563 Davidson Aug 73 Comments on the RCTE Telnet Option

A critique based on inferences drawn from the sample Tenex interaction in RFC 560.

562 McKenzie Aug 73 Modifications to the Telnet Specification

Presenting two documents that update RFC 495, plus summarizing the changes.

561 Bhushan Sep 73 Standardizing Network Mail Headers

A proposed document for the explicit specification of such header information as author, title, and date within the current FTP mail protocol.

560 Crocker Aug 73 Remote Controlled Transmission and Echoing Telnet Option

Defines a Telnet option for detailed control of echoing to promote interactive use on long delay paths.

559 Bhushan Aug 73 Comments on the New Telnet Protocol and Its Implementation

This RFC describes the experience that MIT-DM had with the implementation of the new Telnet protocol (both server and user).

558 Never Issued.

557 Wessler Aug 73 Revelations in Network Host Measurements

A report to the RFC community on the current network host measurements.

556 McKenzie Aug 73 Traffic Statistics

A report on the Host traffic statistics for the month of July 1973. Updates RFC 538.

555 White Jul 73 Response to Critiques of the Proposed Mail Protocol

Response to the proposal for a Mail Protocol (RFC 524).

554 Never Issued.

553 Thomas Jul 73 Draft Design for a Text/Graphics Protocol

This document was proposed as a synthesis of existing ideas rather than an attempt to put forth new ones. It draws upon the concerns about the lack of text-handling capabilities of the protoocl suggested in RFC 493.

552 Owen Jul 73 Single Access to Standard Protocols

Queries and statements regarding a socket number assignment for a single access protocol before the proposed mail protocol becomes official.

551 Feinroth Aug 73 NYU, ANL, and LBL Joining the Net

Announcement of the intent of several Atomic Energy Commission installations to enter the network.

550 Deutsch Aug 73 NIC NCP Experiment

Statistics on total incoming messages, incoming host-host control opcodes, and size of outgoing messages.

549 Michener Jul 73 Minutes of Network Graphics Group Meeting

Description of a meeting on graphics held in July 1973.

548 Walden Aug 73 Hosts Using the IMP Going Down Message

Discusses the user and intention of the ARPANET IMP's "going down" message.

547 Walden Aug 73 Change to the Very Distant Host Specification

A document on a new version of figure F-4 for BBN Report 1822.

546 Thomas Aug 73 Tenex Load Averages for July 1973

Report on the load on two of the key service computers on the ARPANET.

545 Pickens Jul 73 Of What Quality be the UCSB Resource Evaluators?

This memo is in response to RFC 531.

544 Meyer Jul 73 Locating On-Line Documentation at SRI-ARC

Updated memo on how to access on-line documentation at the NIC.

543 Meyer Jul 73 Network Journal Submission and Delivery

Announcement that the first implementation of a Network Journal Submission and Delivery system is now experimentally up.

542 Neigus Jul 73 File Transfer Protocol

This RFC states that there are considerable changes from the last "official" version of FTP, but the gross structure still remains the same. References RFCs 354, 454, and 495.

541 Never Issued.

540 Never Issued.

539 Crocker Jul 73 Thoughts on the Mail Protocol Proposed in RFC 524

This memo is in response to RFC 524. In general, the authors of this RFC feel that the protocol is extremely rich. They also feel that there are some minor and some major problems.

538 McKenzie Jul 73 Traffic Statistics

A report on the Host traffic statistics for the month of June 1973. Updates RFC 522.

537 Bunch Jun 73 Announcement of NGG Meeting

Arrangement details for a graphics meeting held July 1973. See RFC 549.

536 Never Issued.

535 Thomas Jul 73 Comments on File Access Protocol

This memo is in response to RFC 420.

534 Walden Jul 73 Lost Message Detection

This RFC presents three suggestions for detecting the loss of messages by the communications subsystem.

533 Walden Jul 73 Message-ID Numbers

Notice that the ARPANET link field of 8-bits has been expanded to 12-bits and renamed the message-id field.

532 Merryman Jul 73 The UCSD-CC Server-FTP Facility

A description of the FTP service at UCSD.

531 Padlipsky Jun 73 Feast or Famine? - A Response to Two Recent RFC's About Network Information

This memo is in response to RFCs 514 and 519.

530 Bhushan Jun 73 A Report on the SURVEY Project

The purpose of this paper is 1) to report on the status of the SURVEY project and current data, 2) to inform the ARPANET community of the services offered related to this project, 3) to report on future plans, and 4) to ask for suggestions and improvements.

529 McKenzie Jun 73 A Note on Protocol Synch Sequences

A response to RFC 513.

528 McQuillan Jun 73 Software Checksumming in the IMP and Network Reliability

A description of some of the modifications that have recently been made to the IMP and TIP programs.

527 Merryman Jun 73 ARPAWOCKY

A parody by D. L. Covill of the ARPANET based on the Jabberwocky of Lewis Carroll

526 Pratt Jun 73 Technical Meeting - Digital Image Processing Software Systems

Announcement of a technical meeting on digital image processing software systems.

525 Parrish Jun 73 MIT-Mathlab Meets UCSB-OLS

A description of problem solving using both the MIT-PlACSYM system and the UCSB-OLS system.

524 White Jun 73 A Proposed Mail Protocol

A proposed specification for handling mail in the ARPA network.

523 Bhushan Jun 73 SURVEY is in Operation Again

The purpose of this RFC is to alert the network community that the survey program at MIT-DMCG computer system is in operation.

522 McKenzie Jun 73 Traffic Statistics

A report on the Host traffic statistics for the month of May 1973. Updates RFC 509.

521 McKenzie May 73 Restricted Use of IMP DDT

Proposal of restricted use of IMP DDT due to opinions from representatives of several sites feeling that uncontrolled use of IMP DDT made access control mechanisms too vulnerable to interception or tampering.

520 Day Jun 73 Memo to FTP Group (Proposal for File Access Protocol)

This document discusses the File Access Protocol as an extension to FTP.

519 Pickens Jun 73 Resource Evaluation

UCSB announces a new test group based upon RFC 369, which attempts to take a detailed look at specific network resources and develop initial site dependent and function dependent MINIMAN's.

518 Feinler Jun 73 ARPANET Accounts

A memo on information regarding opening an account at a given site on the ARPANET.

517 Never Issued.

516 Postel May 73 Lost Message Detection

This RFC is replaced by RFC 534.

515 Winter Jun 73 Specifications for Datalanguage, Version 0/9

This specification for Datalanguage is extremely primitive. Version 0/9 is currently running at CCA and offers an opportunity for experience with the Datacomputer and with fundamental Datalanguage concepts.

514 Kantrowitz Jun 73 Network Make-Work

Updates RFC 459.

513 Hathaway May 73 Comments on the New Telnet Specifications

Discussion of the Telnet Protocol.

512 Hathaway May 73 Lost Message Detection

This RFC is replaced by RFC 534.

511 North May 73 Enterprise Phone Service to NIC From ARPANET Sites

Discussion of cost and alternatives for special telephone numbers for the NIC.

510 White May 73 Request for Network Mailbox Addresses

Announcement of Network Journal delivery by the NIC and a request for updated/additional network mailbox addresses.

509 McKenzie May 73 Traffic Statistics

A report on the Host traffic statistics for the month of April 1973. Updates RFC 497.

508 Pfeifer May 73 Real-Time Data Transmission on the ARPANET

Discussion on the pros and cons of support of real-time processes on the ARPA Network.

507 Never Issued.

506 Padlipsky Jun 73 An FTP Command Naming Problem

This RFC discusses a problem when using the File Transfer Protocol: the choice of names for two crucial commands is faulty.

505 Padlipsky Jun 73 Two Solutions to a File Transfer Access Problem

This memo is in response to RFCs 487 and 501.

504 Thomas May 73 Workshop Announcement

Detailed plans for a workshop on Automated Resource Sharing to be held May 1973.

503 Neigus Apr 73 Socket Number List

This RFC has been replaced by RFCs 997 and 990.

502 Never Issued.

501 Pogran May 73 Un-Muddling "Free File Transfer"

This memo is in response to RFC 487.

500 Shoshani Apr 73 The Integration of Data Management Systems on a Computer Network

In this paper, discussion is focused on an approach to integrating data management systems on a computer network for the purpose of data sharing.

499 Reussow Apr 73 Harvard's Network RJE

A description of the remote job entry service at Harvard.

498 Braden Apr 73 On Mail Service to CCN

A description of the electronic mail service at UCLA-CCN.

497 McKenize Apr 73 Traffic Statistics

A report on the Host traffic statistics for the month of March 1973. Updates RFC 482.

496 Auerbach Apr 73 A TNLS Quick Reference Card is Available

Announcement of a new TNLS Quick Reference Card.

495 McKenize May 73 Telnet Protocol Specification

Results of an open meeting discussing Telnet, with two attached documents which report the results of that meeting.

494 Walden Apr 73 Availability of MIX and MIXAL in the Network

A list of hosts that support programming in MIX and MIXAL.

993 Michener Apr 73 Graphics Protocol

Discuses the opinions and decisions reached at the second meeting of the Network Graphics Group.

492 Meyer Apr 73 Response to RFC 467

This document briefly describes the problems and proposed solutions, offers comments and alternative suggestions in response to RFC 467.

491 Padlipsky Apr 73 What is "Free"?

This memo discusses the assertion that network mail should be free; i.e., no login or USER command should be required.

490 Pickens Mar 73 Surrogate RJS for UCLA-CCN

A description of how UCLA's RJS can be accessed from UCSB's standard remote job entry service.

489 Postel Mar 73 Comment on Resynchronization of Connection Status Proposal

Comments on ideas proposed in RFC 467.

488 Auerbach Mar 73 NLS Classes at Network Sites

This RFC solicits comments from the Network community on the desirability of doing on-site classes.

487 Bressler Mar 73 Host-Dependent FTP Parameters

This memo is in response to RFC 430.

486 Bressler Apr 73 Data Transfer Revisited

A proposeal to base RJE and FTP on a common data transfer protocol.

485 Pickens Mar 73 MIX and MIXAL at UCSB

A response to Walden's MIX query (RFC 473).

484 Never Issued.

483 Kudlick Mar 73 Cancellation of the Resource Notebook Famework Meeting

482 McKenzie Mar 73 Traffic Statistics

A report on the Host traffic statistics for the month of February 1973. Updates RFC 455.

481 Never Issued.

480 White Mar 73 Host-Dependent FTP Parameters

This memo is in response to RFC 430.

479 White Mar 73 Use of FTP by the NIC Journal

This RFC states how the NIC outlined its requirements for implementing FTP Journal delivery and submission.

478 Bressler Mar 73 FTP Server-Server Interaction - II

Discusses server-server interaction where, in a typical situation, a user conversing with two servers is interested in retrieving a file from one site and sending it to another.

477 Krilanovich May 73 Remote Job Service at UCSB

This RFC is the follow-on document to RFC 436. This document restates the essence of the official RJE Protocol and documents in detail UCSB's implementation of it. Obsoletes RFC 436.

476 McKenzie Mar 73 IMP/TIP Memory Retrofit Schedules (Revision 2)

Describes plans and schedule for upgrading IMPs and TIPs.

475 Bhushan Mar 73 FTP and the Network Mail System

This paper describes the author's understanding of the results of the Network Mail System meeting and the implications for FTP.

474 Bunch Mar 73 Announcement of Forthcoming Meeting of the Network Graphics Working Group and Call for RFC's.

Plans for a graphics meeting to be held in May 1973.

473 Walden Feb 73 MIX and MIXAL?

472 Bunch Mar 73 Illinois' Reply to Maxwell's Request for Graphics Information

This RFC represents the author's response to NIC document 14925.

471 Thomas Mar 73 Announcement of a (Tenative) Workshop on Multi-Site Executive Programs

A suggestion for a workshop and a query for interest.

470 Thomas Mar 73 Change in Socket for TIP News Facility

469 Kudlick Mar 73 Network Mail Meeting Summary

A description of a meeting on mail held February 1973.

468 Braden Mar 73 FTP Data Compression

This RFC describes the definition of the "HASP" or compressed mode.

467 Burchfiel Feb 73 Proposed Change to Host-Host Protocol Resynchronization of Connection Status

To achieve resynchronization of allocation, this RFC proposes the addition of two commands to the host-host protocol.

466 Winett Feb 73 Telnet Logger/Server for Host LL-67

This RFC contains writeup documents on the Telnet Logger/Server for the CP/CMS system on the Lincoln Laboratory 360/67.

465 Never Issued.

464 Kudlick Feb 73 Resource Notebook Framework

This document presents a framework for coordinating all the surveys and data gathering efforts concerned with "resource notebook" type of information.

463 Bhushan Feb 73 FTP Comments and Response to RFC 430

This RFC represents the author's response to RFC 430 and other similar views.

462 Iseli Feb 73 Responding to User Needs

A proposal to have network documentation maintained at the source, that is, by each site, and available as a distributed database.

461 McKenzie Feb 73 Telnet Meeting Announcement

Plans for a meeting on Telnet to be held March 1973.

460 Kline Feb 73 NCP Survey

This RFC is a first in a series which will request information on implmentation of host-to-host protocol.

459 Kantrowitz Feb 73 Network Questionnaires

Suggests that there is too much or too many different people trying to gather data from all the other sites.

458 Bressler Feb 73 Mail Retrieval via FTP

Proposal of two new FTP commands called ReaDMailFile and ReaDMail.

457 Walden Feb 73 TIPUG

How to get updates to the TIP Users Guide.

456 NIC Feb 73 Memorandum

Change in the meeting time for the Network Mail meeting discussed in RFC 453.

455 McKenzie Feb 73 Traffic Statistics

Report on the Host traffic statistics for the month of January 1973. Updates RFC 443.

454 McKenzie Feb 73 File Transfer Protocol (Meeting Announcement and a New Proposed Document

The specification of the File Transfer Protocol and the announcement of a meeting (March 1973) to discuss it.

453 Kudlick Feb 73 Meeting Announcement to Discuss a Network Mail System

Plans for a meeting on electronic mail held February 1973. See RFC 469.

452 Winett Feb 73 Telnet Command at Host LL

This RFC documents the use of the Telnet command at Host LL for uses under the CP/CMS time-sharing system.

451 Padlipsky Feb 73 Tentative Proposal for a Unified User Level Protocol

A suggestion for the idea of a network standard command language for interactive systems.

450 Padlipsky Feb 73 Multics Sampling Timeout Change

Announcement of better service for experimental users of MIT Multics.

449 Walden Jan 73 The Current Flow-Control Scheme for IMPSYS

Updates RFC 442.

448 Braden Feb 73 Print Files in FTP

This document reviews the problem of print files.

447 McKenzie Jan 73 IMP/TIP Memory Retrofit Schedule

Updates RFC 434.

446 Deutsch Jan 73 Proposal to Consider a Network Program Resource Notebook

445 McKenzie Jan 73 IMP/TIP Preventive Maintenance Schedule

444 Never Issued.

443 McKenzie Jan 73 Traffic Statistics

Report on the Host traffic statistics for the month of December 1972. Updates RFC 422.

442 Cerf Jan 73 The Current Flow-Control Scheme for IMPSYS

This RFC discusses the current flow-control scheme for IMPSYS.

441 Bressler Jan 73 Inter-Entity Communication - An Experiment

A status report concerning an experiment based on the desire of users, at their consoles, to converse with one another, and to receive some debugging assistance.

440 Walden Jan 73 Scheduled Network Software Maintenance

Explains plans and schedule for IMP software maintenance, expands the normal time slot.

439 Cerf Jan 73 PARRY Encounters the Doctor

A lighthearted documentation on a session that actually happened on September 18, 1972.

438 Thomas Jan 73 FTP Server-Server Interaction

This document suggests a simple extension to FTP which would allow a FTP user process at one site to arrange for FTP server processes at other sites to act cooperatively on its behalf.

437 Faeh Jun 73 Data Reconfiguration Service at UCSB

Announcement of the availability of the Data Reconfiguration Service (DRS) at UCSB.

436 Krilanovich Jan 73 Announcement of RJS at UCSB

Announcement of the availability of RJS at UCSB.

435 Cosell Jan 73 Telnet Issues

This RFC discusses a number of Telnet related issues, with the central issue of discussion being echoing.

434 McKenzie Jan 73 IMP/TIP Memory Retrofit Schedule

Explains plans and schedule for IMP and TIP upgrades.

433 Postel Dec 72 Socket Number List

Establishment of assigned socket numbers to be used for public functions. This RFC has been replaced by RFC 997 and 990.

432 Neigus Dec 72 Network Logical Map

Attachment of the network logical map as of December 30, 1972.

431 Krilanovich Dec 72 Update on SMFS Login and Logout

This document obsoletes RFC 399, which introduced the Login and Logout commands for UCSB's SMFS, but was incomplete. RFC 399 is restated more fully in this RFC.

430 Braden Feb 73 Comments on File Transfer Protocol

Discusses several issues in FTP.

429 Postel Dec 72 Character Generator Process

A proposal that there be a standard process implemented on whatever hosts desire which generates character data with out any regard to input.

428 Never Issued.

427 Never Issued.

426 Thomas Jan 73 Reconnection Protocol

This document describes several situations in which the ability to reconnect is useful, presents a mechanism to achieve reconnections, sketches how the mechanism could be added to Host-Host or Telnet protocol, and recommends a place for the mechanism in the protocol hierarchy.

425 Bressler Dec 72 "But my NCP costs $500 a day..."

Discussion on the cost of network software and network use.

424 Never Issued.

423 Noble Dec 72 UCLA Campus Computing Network Liaison Staff for ARPA Network

A list of ARPA network contacts at CCN. Updates RFC 389.

422 McKenzie Dec 72 Traffic Statistics

Report on the Host traffic statistics for the month of November 1972. Updates RFC 413.

421 McKenzie Nov 72 A Software Consulting Service for Network Users

An announcement of a BBN software consulting service that has been established for ARPA network users.

420 Murray Jan 73 CCA ICCC Weather Demo

Announcement that the weather demo for the ICCC show is now generally available.

419 Vezza Dec 72 MIT-DMS on Vacation

The MIT Dynamic Modeling System will be down for 2-4 weeks.

418 Hathaway Nov 72 Server File Transfer Under TSS/360 at NASA/Ames Research Center

This RFC is a description of the initial implementation of Server File Transfer at NASA-Ames Research Center.

417 Postel Nov 72 LINK Usage Violation

The protocol police issue a citation.

416 Norton Nov 72 The ARC System will be Unavailable for Use During Thanksgiving Week

The SRI-ARC machine will be down for 9-10 days.

415 Murray Nov 72 TENEX Bandwidth

Considerations of the performances of each host. References RFC 392.

414 Bhushan Nov 72 File Transfer Protocols (FTP) Status and Further Comments

A status report on working server and user FTPs.

413 McKenzie Nov 72 Traffic Statistics

Three sets of network traffic statistic reports. Updates RFC 400.

412 Hicks Nov 72 User FTP Documentation

A "help" file for the Utah-10 implementation of the User FTP process.

411 Padlipsky Nov 72 New Multics Network Software Features

Discussion on two recently-installed features of the Multics Network software.

410 McQuillan Nov 72 Removal of the 30-Second Delay When Hosts Come Up

A proposal to elminate the 30-second delay altogether.

409 White Dec 72 TENEX Interface to UCSB's Simple-Minded File System

This document is intended to provide users with the information necessary to use SMFS from a terminal; the reader is assumed familiar with Tenex.

408 Owen Oct 72 NETBANK

A proposed idea for a protocol (or service) that is offered as an aid to network use for new users.

407 Bressler Oct 72 Remote Job Entry Protocol

The release of the official Remote Job Entry Protocol, per the ARPA office.

406 McQuillan Oct 72 Scheduled IMP Software Releases

Explains the plans and schedule for IMP software maintenance.

405 McKenzie Oct 72 Correction to RFC 404

Typographical error notation. Obsoletes RFC 404.

404 McKenzie Oct 72 Host Address Changes Involving Rand and ISI

The new address of ISI is IMP 22. THe new address of RAND is IMP 7.

d

403 Hicks Jan 73 Desirability of a Network 1108 Service

402 NIC Oct 72 ARPA Network Mailing Lists

Obsoletes RFC 363.

401 Hansen Oct 72 Conversion of NGP-0 Coordinates to Device Specific Coordinates

A means is described to convert NGP coordinates to interger coordinates in the range zero to M, where M is the maximum address of the device screen on a machine using 2's complement arithmetic.

400 McKenzie Oct 72 Traffic Statistics

A report on the Host traffic statistics for the month of September 1972. Updates RFC 391.

399 Krilanovich Sep 72 SMFS Login and Logout

398 Pickens Sep 72 UCSB Online Graphics

Announcement that users with Tektronix or IMLAC terminals, or with systems that support the proposed Level 0 graphics protocol can access UCSB graphics.

397 Never Issued.

396 Bunch Nov 72 Network Graphics Working Group Meeting - Second Iteration

395 McQuillan Oct 72 Switch Settings on IMPs and TIPs

Discussion on a description of the switches on the front panel of IMPs and TIPs that are important to the correct operation of the network software.

394 McQuillan Sep 72 Two Proposed Changes to the IMP-HOST Protocol

Updates RFC 381. This note describes two changes to the IMP-Host communication protocol described in BBN Report 1822.

393 Winett Oct 72 Comments on Telnet Protocol Changes

Comments and objections to two of the three recent suggestions for changing the Telnet protocol as described in RFC 328.

392 Hicks Sep 72 Measurement of Host Costs for Transmitting Network Data

Discussion of Utah's development of a program to use the Remote Job Service System (RJS) at UCLA-CCN in conjunction with Utah's "batch" users.

391 McKenzie Sep 72 Traffic Statistics

A report on the Host traffic statistics for the month of August 1972. Updates RFC 378.

390 Braden May 72 TSO Scenario Batch Compilation and Foreground Execution

An example session with TSO on UCLA-CCN.

389 Noble Aug 72 UCLA Campus Computing Network Liaison Staff for ARPA Network

A list for ARPA Network contacts at UCLA/CCN.

388 Cerf Aug 72 NCP Statistics

Updates RFC 323. Announcement that UCLA/NMC is prepared to gather NCP statistics on a daily basis.

387 Kelley Aug 72 Some Experiences in Implementing Network Graphics Protocol Level 0

386 Cosell Aug 72 Letter to TIP Users - 2

A second point of information letter to TIP users. Updates RFC 365.

385 Bhushan Aug 72 Comments on the File Transfer Protocol (RFC 354)

The comments in this document include errata, further discussion, emphasis points, and additions to the protocol. Updates RFC 354.

384 North Aug 72 Official Site IDENTS for Organizations in the ARPA Network

Includes two lists, a list in alpha order and a list by Site address. Obsoletes RFC 289.

383 Never Issued.

382 McDaniel Aug 72 Mathematical Software on the ARPA Network

Comments on the efforts to develop high quality libraries of mathematical and statistical subroutines.

381 McQuillan Jul 72 Three Aids to Improved Network Operation

Discusses helpful aids to improved network operation: schedules of software maintenance, IMP-to-Host communication, and network news service.

380 Never Issued.

379 Braden Aug 72 Using TSO at CCN

Announcement that IBM's Time Sharing Option (TSO) is up on a regularly scheduled basis at UCLA/CCN.

378 McKenzie Aug 72 Traffic Statistics

Traffic statistics for the month of July 1972.

377 Braden Aug 72 Using TSO Via ARPA Network Virtual Terminal

Announcement of IBM's Time Sharing Option (TSO) availability at UCLA/CCN on Socket 1, using the standard Telnet protocol.

376 Westheimer Aug 72 Network Host Status

Report on the status of Network Hosts from July 31 to August 4. Updates RFC 370.

375 Never Issued.

374 McKenzie Jul 72 IMP System Announcement

Updates RFCs 331,343,359.

373 McCarthy Jul 72 Arbitrary Character Sets

Suggests how to get arbitrary characters sets stored in computers and to be able to display them on any CRT screen, edit them using any keyboard, and print them on any printer.

372 Watson Jul 72 Notes on a Conversation with Bob Kahn on the ICCC

Discussion on some aspects of the ICCC meeting demonstration.

371 Kahn Jul 72 Demonstration at International Computer Communications Conference

Observation and notes on the ICCC meeting demonstration.

370 Westheimer Jul 72 Network Host Status

Report on the status of Network Hosts from July 17 to July 28. Updates RFC 367.

369 Pickens Jul 72 Evaluation of ARPANET Services (January through March, 1972)

This paper provides descriptions, surveys, critiques of ARPANET services, and suggestions for improvement.

368 Braden Jul 72 Comments on "Proposed Remote Job Entry Protocol"

Suggestions on honing the final standard of the RJE protocol (references RFC 360).

367 Westheimer Jul 72 Network Host Status

Report on the status of Network Hosts from July 1 to July 16. Updates RFC 366.

366 Westheimer Jul 72 Network Host Status

Report on the status of Network Hosts from June 19 to June 30. Updates RFC 362.

365 Walden Jul 72 A Letter to All TIP Users

Descriptions of new commands that have recently been added to the "TIP Users Guide".

364 Abrams Jul 72 Serving Remote Users on the ARPANET

This paper asserts that a problem exists in serving remote users and offers a set of suggestions for its amelioration.

363 NIC Aug 72 ARPA Network Mailing Lists

Obsoletes RFC 329.

362 Westheimer Jun 72 Network Host Status

Report on the status of Network Hosts from June 5 to June 16. Updates RFC 353.

361 Bressler Jul 72 In Response to RFCs 347 and 348

Deamon Processes on Host 106.

360 Holland Jun 72 Proposed Remote Job Entry Protocol

This protocol specifies the Network standard procedures for remote job entry as a mechanism whereby a user at one location causes a batch-processing job to be run at some other location.

359 Walden Jun 72 The Status of the Release of the New IMP System (2600)

Obsoletes RFC 343.

358 Never Issued.

357 Davidson Jun 72 An Echoing Strategy for Satellite Links

This document describes a strategy which will eliminate the delay associated with simple echoing and allow the transmission delay to be hidden in the cost of computation only. This scheme is proposed as an optional addition to existing User Telnets; its use requires the explicit support of a cooperating server process.

356 Alter Jun 72 ARPA Network Control Center

Announcement of the NCC's new operation schedule.

355 Davidson Jun 72 Response to RFC 346

354 Bhushan Jul 72 The File Transfer Protocol

This RFC obsoletes RFCs 264,265. The File Transfer Protocol (FTP) is a protocol for file transfer between HOSTs on the ARPANET. The primary function of FTP is to transfer files efficiently and reliably among hosts and to allow the convenient use of remote file storage capabilities.

353 Westheimer Jun 72 Network Host Status

Status report of most Network Hosts from May 22 to June 2. Updates RFC 344.

352 Crocker Jun 72 TIP Site Information Form (Graphics)

An information form to provide additional information for TIP users of the NET.

351 Crocker Jun 72 (Graphics) Information Form for the ARPANET Graphics Resources Notebook

A questionnaire about the state of graphics resources at various sites.

350 Stoughton May 72 User Accounts for UCSB On-Line System

Announcement of new login parameters for the UCSB On-Line System.

349 Postel May 72 Proposed Standard Socket Numbers

A proposal to officially standardize socket number assignments.

348 Postel May 72 Discard Process

A RFC discussing debugging and measurement puposes for those hosts which are willing to implement a "Discard" process. Old version; see RFC 863.

347 Postel May 72 Echo Process

A RFC discussing debugging and measurement puposes for those hosts which are willing to implement an "Echo" process. Old version; see RFC 862.

346 Postel May 72 Satellite Considerations

Discussion on using space satellite transmission links in the ARPANET.

345 Kelly May 72 Interest in Mixed Integer Programming (MPSX on 360/91 at CCN)

Request for interested persons in the MPSX to contact author.

344 Westheimer May 72 Network Host Status

Updates RFC 342.

343 McKenzie May 72 IMP System Change Notification

Obsoletes RFC 331. Release of IMPSYS 2600 was unsuccessful.

342 Westheimer May 72 Network Host Status

Updates RFC 332.

341 Never Issued.

340 O'Sullivan May 72 Proposed Telnet Changes

A proposed change to the Telnet protocol calling for one standard protocol and dropping the idea of minimum implementation.

339 Thomas May 72 MLTNET - A "Multi-Telnet" Subsystem for TENEX

This RFC describes MLTNET as a Telnet-like facility for Tenex which enables a user to control a number of jobs, running on different ARPANET hosts. MLTNET is currently a subsystem on the BBN-Tenex host.

338 Braden May 72 EBCDIC/ASCII Mapping for Network RJE

This RFC proposes: to make all users of NETRJS aware of the changed ASCII mapping; to call this problem to the attention of the Network RJE Protocol committee; and to knowledge and support Joel Winett's pioneering work in this area.

337 Never Issued.

336 Cotton May 72 Level 0 Graphic Input Protocol

A description of the graphics input protocol as discussed at a Network Graphics Working Group meeting.

335 Bryan May 72 New Interface-IMP/360

Announcement of a new interface and requests to hear of any difficulties network users encounter while operating with UCSB.

334 McKenzie May 72 Network Use on May 8

333 Bressler May 72 A Proposed Experiment with a Message Switching Protocol

This document attempts to sketch how one would organize the lowest level host-host protocol in the ARPANET around Message Switching Protocols (MSPs) and how this organization would affect the implementation of the host software.

332 Westheimer Apr 72 Network Host Status

Updates RFC 330.

331 McQuillan Apr 72 IMP System Change Notification

Announcement of the release of IMPSYS 2600.

330 Westheimer Apr 72 Network Host Status

Updates RFC 326.

329 NIC May 72 ARPA Network Mailing Lists

328 Postel Apr 72 Suggested Telnet Protocol Changes

This RFC proposes changes to the Telnet protocol.

327 Bhushan Apr 72 Data and File Transfer Workshop Notes

326 Westheimer Apr 72 Network Host Status

Updates RFC 319.

325 Hicks Apr 72 Network Remote Job Entry Program - NETRJS

Report on the NETRJS running at the University of Utah.

324 Postel Apr 72 RJE Protocol Meeting

Announcement of a RJE Protocol meeting at UCLA.

323 Cerf Mar 72 Formation of Network Measurement Group (NMG)

Describes some network measurement results, some plans for further measurement and the formation of an interest group.

322 Cerf Mar 72 Well Known Socket Numbers

Announcement of intent to catalog all sockets which are supposed to be well-known.

321 Karp Mar 72 CBI Networking Activity at MITRE

Response to RFC 313 - comments on Computer Based Instruction.

320 Reddy Mar 72 Workshop on Hard Copy Line Graphics

Announcement of a one day workshop on the XCRIBL system at CMU.

319 Westheimer Mar 72 Network Host Status

Updates RFC 315.

318 Postel Apr 72 Ad Hoc Telnet Protocol

Obsoletes RFC 158. This Telnet specification was effective for several years.

317 Postel Mar 72 Official Host-Host Protocol Modification: Assigned Link Numbers

Lists current Link number assignments. This RFC has been replaced by RFCs 997 and 990.

316 McKay Feb 72 ARPA Network Data Management Working Group Meeting Report

315 Westheimer Mar 72 Network Host Status

Updates RFC 306.

314 Cotton Mar 72 Next Network Graphics Working Group Meeting

Describes plans for a graphics meeting to be held in April 1972.

313 O'Sullivan Mar 72 Computer Based Instruction

This paper has two purposes: to solicit comments from the NWG and others on how selected classes of resources of a General Purpose Network might be applied to the field of Computer Based Instructions; and initiate a dialog between interested parties on the problem of Computer Base Instruction.

312 McKenzie Mar 72 Proposed Change in IMP-to-Host Protocol

This RFC proposes a redefinition of the IMP-to-Host error message types and the creation of additional IMP-to-Host error message types. These changes should assist the Hosts in determining

appropriate recovery action without causing any serious reprogramming problems.

311 Bryan Feb 72 New Console Attachments to the UCSB Host

Describes types of terminals used at UCSB.

310 Bhushan Apr 72 Another Look at Data and File Transfer Protocols

This paper suggests some specific changes in DTP and FTP that should make them more useful and/or simplify implementation.

309 Bhushan Mar 72 Data and File Tranfer Workshop Announcement

Describes plans for a meeting on FTP to be held April 1972.

308 Seriff Mar 72 ARPANET Host Availability Data

A SURVEY program is up and working to aid in gathering information on the availability of various Hosts on the ARPANET.

307 Harslem Feb 72 Using Network Remote Job Entry

Announcement of a program on a PDP-10 allowing access to the Remote Job Service (RJS) at UCLA.

306 Westheimer Feb 72 Network Host Status

Updates RFC 298.

305 Alter Jan 72 Unknown Host Numbers

Discusses testing of IMPs and notes that this may cause some hosts to receive messages from unregistered addresses.

304 McKay Feb 72 A Data Management System Proposal for the ARPA Network

A proposal to provide a framework that will allow the ARPA community to recognize and develop the necessary tools in a unified manner enabling the network to manage its resources to the best advantage of the user.

303 NIC Feb 72 ARPA Network Mailing List

Obsoletes RFC 300.

302 Bryan Feb 72 Excercising the ARPANET

Describes a class project to tryout hosts on the ARPANET.

301 Alter Feb 72 BBN IMP (No. 5) and NCC Schedule for March 4, 1972

BBN host will be down for a day for moving equipment.

300 NIC Jan 72 ARPA Network Mailing Lists

Obsoletes RFC 211.

299 Hopkin Feb 72 Information Management System

Announcement of intent to build an Information Management and Statistical System for the ILLIAC IV.

298 Westheimer Feb 72 Network Host Status

Updates RFC 293.

297 Walden Jan 72 TIP Message Buffers

Discussion regarding the size of the TIP's message buffers.

296 Liddle Jan 72 DS-1 Display System

This RFC describes a proposed modular graphic/alphanumeric display system containing a 512 by 512 line, 60 line per inch plasma display/memory panel and a minprocessor. It is intended to combine the advantages of display memory and local processing power in three general modes.

295 Postel Oct 71 Report of the Protocol Workshop

A report on the decisions reached at the protocol workshop held in conjunction with the NWG meeting of 10 October 1971.

294 Bhushan Jan 72 The Use of "Set Data Type" Transaction in File Transfer Protocol

Updates RFC 265.

293 Westheimer Jan 72 Network Host Status

Updates RFC 288.

292 Michener Jan 72 Graphics Protocol - Level 0 only

A description of part of the proposed Network Standard Graphics Protocol for transmitting graphics data within the ARPA network. The particular aspects covered are related to the form and content of graphics information sent from a source of graphical information to a display package for output to a graphics console.

291 McKay Jan 72 Data Management Meeting Announcement

A meeting about datamanagement will be held February 1972.

290 Mullery Jan 72 Computer Network and Data Sharing: A Bibliography

Updates RFC 243.

289 Watson Dec 71 What We Hope is an Official List of Host Names

An accepted list of official formal host names and nicknames.

288 Westheimer Jan 72 Network Host Status

Updates RFC 287.

287 Westheimer Dec 71 Network Host Status

Reports on tests of host availability for 6 Dec to 18 Dec 1971.

286 Forman Dec 71 Network Library Information System

This RFC solicites interested parties in the ARPA community to form a working group whose interests include developing a new system that would enable computer query of Library holdings. Georgetown University is currently designing a Learning Resource Center which could be the prototype of the proposed working group.

285 Huff Dec 71 Network Graphics

This paper is aimed at bringing together the present state of graphics on the NET for the newcomer and attempting to add a little more documentation to the current ground covered in graphics research by ARPA.

284 Never Issued.

283 Braden Dec 71 NETRJT - Remote Job Service Protocol for TIPS

Discusses how it may be feasible in the future to use TIPS for remote job entry in one or more of three ways: attach local card readers, line printer, and card punches directly to TIP ports, connect a remote batch terminal to a full-duplex TIP port via a communication line, and/or use the tape drive, and do card-to-tape and/or tape-to-print on another computer.

282 Padlipsky Dec 71 Graphics Meeting Report

Describes a graphics meeting held November 1972.

281 McKenzie Dec 71 A Suggested Addition to File Transfer Protocol

Suggests an improved restart procedure in FTP.

280 Watson Nov 71 A Draft Set of Host Names

A proposed list of names for hosts.

279 Never Issued.

278 Bhushan Nov 71 Revision of the Mail Box Protocol

This paper obsoletes RFC 221. The changes to RFC 221 are presented in this document. The protocol is also restated for additional review.

277 Never Issued.

276 Watson Nov 71 NIC Course

A course announcement from the NIC on the use of its Online System (NLS).

275 Never Issued.

274 Forman Nov 71 Establishing a Local Guide for Network Usage

Discussion on the best solutions to the general problem of interfacing Hosts to IMPs.

273 Watson Oct 71 More on Standard Host Names

Discussion on the best way to set up naming schemes for standard Host names.

272 Never Issued.

271 Cosell Jan 72 IMP System Change Notification

Announcement of a new version of the IMP System, Version 2514.

270 McKenzie Jan 72 Correction to BBN Report No. 1822

Updates pages 25 and 26 of BBN report 1822.

269 Brodie Dec 71 Some Experience with File Transfer

Updates RFCs 122,238,172.

268 Postel Nov 71 Graphic Facilities Information

Request for graphics information.

267 Westheimer Nov 71 Network Host Status

Reports on tests of host availability for 8 Nov to 19 Nov 1971.

266 Westheimer Nov 71 Network Host Status

Reports on tests of host availability for 25 Oct to 5 Nov 1971.

265 Bhushan Nov 71 The File Transfer Protocol

This paper is a revision of RFC 172. The changes to RFC 172 are presented in this document. The protocol is also restated for additional review.

264 Bhushan Nov 71 The Data Transfer Protocol

This paper is a revision of RFC 171. The changes to RFC 171 are presented in this document. The protocol is also restated for additional review.

263 McKenzie Dec 71 "Very Distant" Host Interface

Discussion on the best solutions to the general problem of interfacing Hosts to IMPs.

262 Never Issued.

261 Never Issued.

260 Never Issued.

259 Never Issued.

258 Never Issued.

257 Never Issued.

256 Cosell Nov 71 IMPSYS Change Notification

Announcement of a new version of the IMP system, Version 2513.

255 Westheimer Oct 71 Site Status

Updates RFC 252.

254 Bhushan Oct 71 Scenarios for Using ARPANET Computers

This document is provided to facilitate the use of ARPANET host computer systems via the ARPANET. The objective of these scenarios is to aid a user in sampling host computers on the ARPANET, thereby stimulating his interest in using the ARPANET.

253 Moorer Oct 71 Second Network Graphics Meeting Details

Plans for a graphics meeting to be held November 1971. See RFC 282.

252 Westheimer Oct 71 Site Status

Updates RFC 240.

251 Stern Oct 71 Weather Data

Announcement of the USAF Environmental Technical Application Center (ETAC) services in providing weather data for the ARPA Network.

250 Brodie Oct 71 Some Thoughts on File Transfer

Further clarification and proposed revision on several aspects of the proposed Data Transfer Protocol and the File Transfer Protocol.

249 Borelli Oct 71 Coordination of Equipment and Supplies Purchase

Announcement of an agreement reached regarding the study of the feasibility of a coordinating point for purchases of equipment and supplies to be used on the network.

248 Never Issued.

247 Karp Oct 71 Proffered Set of Standard Host Names

Proposed general set of rules for forming Host Names. Obsoletes RFC 226.

246 Vezza Oct 71 Networks Graphics Meeting

245 Falls Oct 71 Reservations for Network Group Meeting

244 Never Issued.

243 Mullery Oct 71 Network and Data Sharing Bibliography

Updated by RFC 290.

242 Haibt Jul 71 Data Descriptive Language for Shared Data

Discussion of representation differences. Three categories are defined: very local representation, representation of collections of data, and other more complex structures that data collections may have.

241 McKenzie Sep 71 Connecting Computers to MLC Ports

Discussion on the pros and cons of computers being connected through serial communication lines to ports on the Terminal IMP's Multi-Line Controller (MLC).

240 McKenzie Sep 71 Site Status

A reissue of RFC 235, without typographical errors.

239 Braden Sep 71 Host Mnemonics Proposed in RFC 226

Discussion and comments on RFC 226.

238 Braden Sep 71 Comments on DTP and FTP Protocols

This RFC updates RFCs 171,172.

237 Watson Sep 71 The NIC's View of Standard Host Names

The NIC strongly favors standardization of host names. In this RFC, the NIC proposes that any standard naming scheme should take into account certain considerations.

236 Postel Sep 71 Standard Host Names

An update of RFC 229, with some modifications included.

235 Westheimer Sep 71 Site Status

Starting with this RFC, BBN will report on the status of most Network Hosts.

234 Vezza Oct 71 Network Working Group Meeting Schedule

Plans for a Network Working Group meeting in October 1971.

233 Bhushan Sep 71 Standardization of Host Call Letters

A currently recommended list of call letters.

232 Vezza Sep 71 Announcement of the next Network Graphics Meeting

Schedule conflict and postponement of the graphics meeting.

231 Heafner Sep 71 Service Center Standards for Remote Usage - A User's View

A statement of views on service center standards. An input to the service center panel discussion of the October Network meeting.

230 Pyke Sep 71 Toward Reliable Operation of Minicomputer-based Terminals on a TIP

Points out inadequate error detection and initiation of corrective measures in the present protocol for communication between a TIP and attached terminals. References RFC 203.

229 Postel Sep 71 Standard Host Names

A suggestion of eight character names and a proposed list of names.

228 Walden Sep 71 Clarification

A correction to RFC 70.

227 Heafner Sep 71 Data Transfer Rates (RAND/UCLA)

A memo on data rates typical of the RJS use at UCLA CCN.

226 Karp Sep 71 Standardization of Host Mnemonics

A list of Host Mnemonics is provided.

225 Harslem Sep 71 RAND/UCSB Network Graphics Experiment

Describes use from RAND of the UCSB-OLS system.

224 McKenzie Sep 71 Comments on Mailbox Protocol

Comments on electronic mail and TIP's.

223 Melvin Sep 71 Network Information Center Schedule for Network Users

Access schedule for remote users of the NIC.

222 Metcalfe Sep 71 System Programmer's Workshop

Announcement of the next workshop.

221 Watson Aug 71 A Mail Box Protocol, Version-2

Discussion of the initial reaction to RFC 196.

220 Never Issued

219 Winter Sep 71 User's View of the Datacomputer

A description of the Datacomputer.

218 Cosell Sep 71 Changing the IMP Status Reporting

A change in internal procedures in the ARPANET status reports from the IMPs to the NIC.

217 White Sep 71 Specification Changes for OLS, RJE/RJOR, and SMFS

Current listing of documents that have been revised.

216 White Sep 71 Telnet Access to UCSB's On-Line System

Discussion of the implementation of a teletype-compatible interface to UCSB's On-Line System.

215 McKenzie Aug 71 NCP, ICP, and Telnet: The Terminal IMP Implementation

Announcement of six Terminal IMPs being incorporated into the Network, with additional Terminal IMPS scheduled for delivery.

214 Harslem Aug 71 Network Checkout

Notification of the verification of certain sites.

213 Cosell Aug 71 IMP System Change Notification

Several changes in the IMP internal procedures.

212 Vezza Aug 71 NWG Meeting on Network Usage

A mailing list for RFC distribution.

211 NIC Aug 71 ARPA Network Mailing List

210 Conrad Aug 71 Improvement of Flow Control

Discussion of the current "give back" - "return" scheme.

209 Cosell Aug 71 Host/IMP Interface Documentation

Discussion of a change to the IMP and the documentation (BBN report 1822).

208 McKenzie Aug 71 Address Tables

A table of hosts on or soon to be on the ARPANET.

207 Vezza Aug 71 A September Network Working Group Meeting

Next meeting announcement.

206 White Aug 71 A User Telnet Description of an Initial Implementation

This document describes a program whose function is to make an Online System terminal appear to any teletype-compatible, time-sharing system in the Network as if it were directly connected to that system.

205 Braden Aug 71 NETCRT - A Character Display Protocol

A significant revision of the character-display protocol (NETCRT), based on CCN's proposed NETCRT from the May NWG Meeting.

204 Postel Aug 71 Sockets in use

Announcement to collect information on the use of socket numbers for standard service programs.

203. Kalin Aug 71 Achieving Reliable Communication

This is a non-standard protocol, suitable for either second or third level use and is proposed with the intent of providing error resistant and highly reliable communication channels.

202 Wolfe Jul 71 Possible Deadlock in ICP

A notation of a possible deadlock that will occur if both sides open thier send or both sides open their receive sockets first.

201 Never Issued.

200 NIC Aug 71 RFC List by Number

RFC's 1-200.

199 Williams Jul 71 Suggestions for a Network Data-Tablet Graphics Protocol

SDC's comments to the discussion of a protocol for network graphics within the ARPA Network community. Concern is focused on the development of the graphics protocol in two areas: non-interactive graphics and data-tablet graphics, as opposed to fully interactive graphics.

198 Heafner Jul 71 Site Certification - Lincoln Labs 360/67

A report from RAND that Lincoln Labs protocol implementations are correct.

197 Shoshani Jul 71 Initial Connection Protocol - Revised

An attempt at a simple version of ICP, assuming one may add commands to Host-Host protocol.

196 Watson Jul 71 A Mail Box Protocol

The purpose of this protocol is to provide at each site a standard mechanism to receive sequential files for immediate or deferred printing or other uses.

195 Mealy Jul 71 Data Computers - Data Descriptions and Access Language

This document discusses some of the problems involved in the unified approach to Network data management, and to suggest possible avenues of approach toward their resolution.

191 Cerf Jul 71 The Data Reconfiguration Service - Compiler/Interpreter Implementation Notes

This document describes the new features of the language, the new syntax, the form interpreter, and the instruction set.

193 Harslem Jul 71 Network Checkout

A report form RAND on testing ten other hosts.

192 Watson Jul 71 Some Factors Which a Network Graphics Protocol Must Consider

Discussion on what any network graphics protocol should come to grips with.

191 Irby Jul 71 Graphics Implementation and Conceptualization at ARC

A brief description of the way in which graphics terminals are conceptualized and used at the Augmentation Research Center.

190 Deutsch Jul 71 DEC PDP-10 - IMLAC Communication System

This document describes an operational system for communicating textual display information between a main-site computer and a remote display processor.

189 Braden Jul 71 Interim NETRJS Specifications

A description of the operation and protocol of the remote job entry service to CCN's 360 Model 91. This interim protocol will be implemented as a production service before the end of July.

188 Karp Jan 71 Data Management Meeting Announcement

Plans for a data management meeting to be held Auguest 1971.

187 McKay Jul 71 A Network/440 Protocol Concept

An information Request for Comments that is intended to convey some of the thinking and philosophy that went into IBM's network protocol and overall network design.

186 Michener Jul 71 A Network Graphics Loader

The Network Graphics Loader described in this document proposes to permit remote users on the ARPA network to obtain graphics output from programs they write for the Evans and Sutherland Line Drawing System.

185 North Jul 71 NIC Distribution of Manuals and Handbooks

The NIC request that sites send copies of manuals and handbooks to them.

184 Kelley Jul 71 Proposed Graphic Display Modes

The ARPA Network node at the University of Illinois' Center for Advanced Computation is different from other nodes. It is not just a simple attachment to the net. Establishment of the computer system specifically for use of the ILLIAC IV and the network is in process. This paper describes the operating systems, network interface and utility routines, and ILLIAC IV routines to be used over the network.

183 Winett Jul 71 The EBCDIC Codes and Their Mapping to ASCII

This document defines and describes the IBM Standard Extended BCD Interchange Code. This is done in order to uniquely map the ASCII codes into corresponding EBCDIC codes in a consistent manner throughout the ARPA Network.

182 North Jun 71 Compilation of List of Relevant Site Reports

A Network Information Center compilation list of all site-produced reports which are of interest to Network participants.

181 McConnell Jun 71 Modifications to RFC 177

This document is intended to modify the proposal for a device independent graphical display description discussed in RFC 177. The main changes are in the definition of coordinate areas to avoid one problem encountered with the old definition and to provide more flexibility.

180 McKenzie Jun 71 File System Questionnaire

An attempt to gather information about local file and data conventions.

179 McKenzie Jun 71 Link Number Assignments

This RFC has been replaced by RFCs 997 and 990.

178 Cotton Jun 71 Network Graphic Attention Handling

The process of attention handling is briefly described, various graphic configurations are discussed, input devices are surveyed to identify the types of data which they produce, and an attention protocol is proposed.

177 McConnell Jun 71 A Device Independent Graphical Display Description

As more nodes are connected to the ARPA network, the types of graphical display processors available to users is quite varied. To attempt to facilitate the transmission of graphical information over the network, a device independent description of a display is described.

176 Bhushan Jun 71 Comments on Byte Size for Connections

This document points out three views on the use of byte size for network connections: 1) Byte size should not be used at all. 2) Byte size is solely for the convenience of NCP's. 3) Byte size choice is a user-level prerogative.

175 Harslem Jun 71 Comments on "Socket Conventions Reconsidered"

Pro and con discussion regarding RFC 167.

174 Postel Jun 71 UCLA-Computer Science Graphics Overview

This document provides an overview of the hardware, software, and intentions of the UCLA Computer Science Department's Graphics project.

173 Karp Jun 71 Network Data Management Committeee Meeting Announcement

A report on the formation of a data managment committee and on its first meeting.

172 Bhushan Jun 71 The File Transfer Protocol

This protocol is a user-level protocol for file transfer between host computers (including terminal IMPs), on the ARPA computer network. The File Transfer Protocol (FTP) uses the data transfer protocol described in RFC 171. This paper assumes knowledge of RFC 171.

171 Bhushan Jun 71 The Data Transfer Protocol

Definition of a low-level Data Transfer Protocol (DTP) to be used for transfer of data in file transfer, remote job entry, and other applications oriented protocols. A companion paper (RFC 172) describes file transfer protocol.

170 NIC Jun 71 RFC List by Number

A list of RFCs 1-170.

168 North May 71 ARPA Network Mailing Lists

Distribution list for RFCs.

167 Bhushan May 71 Socket Conventions Reconsidered

The recent NCP Protocol said nothing about how hosts should assign socket numbers to process ports, except that the low-order bit is to specify socket gender. This document discusses two recent proposals that call for additional network-wide conventions on the 32-bit socket number.

166 Anderson May 71 Data Reconfiguration Service - An Implementation Specification

This DRS experiment involved a software mechanism to reformat Network data streams. The mechanism can be adapted to numerous Network application programs.

165 Postel May 71 A Proferred Official Initial Connection Protocol

This document specifies the third level protocol used to connect a user process at one site with a server process at another site.

164 Heafner May 71 Minutes of Network Working Group Meeting

A 38 page reference on the discussions held at the Network Working Group Meeting.

163 Cerf May 71 Data Transfer Protocols

An informal statement on Data Transfer Protocols, in relation to material discussed at the SJCC.

162 Kampe May 71 NETBUGGER3

Discussion of NETBUGGER3 as a third level program for the debugging of second and third level programs, experimentation with and simulation of third level protocols.

161 Shoshani May 71 A Solution to the Race Condition in the ICP

A proposed solution to a problem that arose out of RFC 143.

160 NIC May 71 RFC Brief List

Title or Partial Title RFC List (1-160)

159 Never Issued.

158 O'Sullivan May 71 Proposed Telnet Protocol

Solicitation of comments, evaluation, and requests for modification of the proposed Telnet protocol.

157 Cerf May 71 Invitation to the Second Symposium on Problems in the Optimization of Data Communication Systems

Announcement of an ACM/IEEE conference on data communication.

156 Bouknight Apr 71 Status of the Illinois Site (Response to RFC 116)

Discusses the status of the operational hardware at the Illinois site.

155 NIC May 71 List to Receive RFCs

Mailing list of people who are receiving the initial distribution of RFCs.

154 Crocker May 71 Exposition Style

A note on style in documentation.

153 Melvin May 71 SRI ARC-NIC Status

Discusses the current computer and network status of the SRI ARC-NIC.

152 Wilber May 71 SRI Artificial Intelligence Status Report

Status report on SRAI's connection to the ARPANET as a research center.

151 Shoshani May 71 Comments on a Proferred Official ICP (RFCs 123,127)

Specific and general remarks regarding the ICP.

150 Kalin May 71 The Use of IPC Facilities

A working paper discussing the exposition of the types of usage to which an IPC facility would be subjected. This document hopes to clarify the goals being pursued and should provide a benchmark for gauging various implementation strategies.

149 Crocker May 71 The Best Laid Plans...

Changes to the topics and attendees of the upcoming NWG meeting.

148 Bhushan May 71 Comments on RFC 123

Regarding the byte size requirements for the initial connection.

147 Winett May 71 The Definition of a Socket

Defining, specifying, and identifying sockets.

146 Karp May 71 Views on Issues Relevant to Data Sharing on Computer Networks

Concurrence with the views presented in RFC 140.

145 Postel May 71 Initial Connection Protocol Control Commands

An interpretation of the exchange between NCP's which would be necessary to carry out the Initial Connection Protocol (ICP) of RFC 123.

144 Shoshani Apr 71 Data Sharing on Computer Networks

An introductory paper for the upcoming NWG meeting in Atlantic City.

143 Naylor May 71 Regarding Proferred Official ICP

Comments on a race condition discovered in the ICP as proposed in RFC 123.

142 Kline May 71 Time-out Mechanism in the Host-Host Protocol

Discussion on potential situations that can occur when sending a message to a foreign site.

141 Harslem Apr 71 Comments on RFC 114 (A File Transfer Protocol)

Further discussion on the File Transfer Protocol.

140 Crocker May 71 Agenda for the May NWG Meeting

A list of topics to be discussed at the upcoming meeting, plus a listing of relevant RFCs that should be reviewed prior to the meeting.

139 O'Sullivan May 71 Discussion of Telnet Protocol

An extension of RFC 137.

138 Anderson Apr 71 Status Report on Proposed Data Reconfiguration Service

Provides a description of a proposed Network experiment and to solicit comments on any aspect of the experiment.

137 O'Sullivan Apr 71 Telnet Protocol - A Proposed Document

Solicitation for review and comment before the Atlantic City NWG meetings.

136 Kahn Apr 71 Host Accounting and Administrative Procedures

Discussion of a plan to be formulated and accepted for the development of a Host accounting system in the ARPA Network.

135 Hathaway Apr 71 Response to RFC 110

Comments and proposals of new conventions to replace the ones proposed in RFC 110.

134 Vezza Apr 71 Network Graphics Meeting

Announcement of the next Network Graphics Meeting at Project MAC in July 1971.

133 Sundberg Apr 71 File Transfer and Error Recovery

Sample interchanges and comments on file transfer and errors.

132 White Apr 71 Typographical Error in RFC 107

Points out an error in RFC 107.

131 Harslem Apr 71 Response to RFC 116 (May NWG Meeting)

A description of networr plans at RAND, including the data reconfiguration service, and a comment on the role of the NWG.

130 Heafner Apr 71 Response to RFC 111 (Pressure from the Chairman)

Discussion of RAND's role in testing other host implementations and schedule dependences.

129 Harslem Apr 71 A Request for Comments on Socket Name Structure

Comments on several suggested socket name structures.

128 Postel Apr 71 Bytes

Discussion of the Byte size parameter allowed by the 2nd level protocol.

127 Postel Apr 71 Comments on RFC 123

Continued interpretations of the exchange between NCP's which would be necessary to carry out the Initial Connection Protocol of RFC 123.

126 McConnell Apr 71 Ames Graphics Facilities at Ames Research Center

Discusses the graphical facilities at Ames for the IBM 360/67 TSS.

125 McConnell Apr 71 Response to RFC 86, Proposal for Network Standard Format for a Graphics Data Stream

Improves and updates RFC 86.

124 Melvin Apr 71 Typographical Error in RFC 107

Points out an error in RFC 107.

123 Crocker Apr 71 A Proferred Official ICP

Description of a family of ICPs (Initial Connection Protocol) suitable for establishing one pair of connections (one in each direction) between any user process and any server process, and proposes a particular subset of this family as the standard ICP for connecting user processes to loggers on systems which accept teletype-like devices.

122 White Apr 71 Network Specifications for UCSB's Simple-Minded File System

UCSB's Simple Minded File System (SMFS) which will provide file storage for network users. This document provides programmers with the information necessary to communicate with SMFS.

121 Krilanovich Apr 71 Network On-Line Operators

Descriptions of operators that have been implemented within UCSB's On-Line System and make the network (via NCP) accessible to On-Line system users.

120 Krilanovich Apr 71 Network PL1 Subprograms

Descriptions of subroutines that have been implemented at UCSB and make the network (via NCP) accessible to PL1 programs executing in the IBM 360/75.

119 Krilanovich Apr 71 Network FORTRAN Subprograms

Descriptions of a set of assembly-language subprograms, their functions and calling sequences.

118 Watson Apr 71 Information Required for Each Service Available to the Network

Cites two classes of information which each site needs to provide for every service or process it makes available over the ARPA network.

117 Wong Apr 71 Some Comments on the Official Protocol

Cites weaknesses in RFC 107, and provides suggestions for correction and handling.

116 Crocker Apr 71 Structure of the May NWG Meeting

Proposed meeting agenda centering around discussions of advertised topics, with published status reports and position papers.

115 Watson Apr 71 Some Network Information Center Policies on Handling Documents

Discusses current document policies between the Network Information Center and sites on the network.

114 Bhushan Apr 71 A File Transfer Protocol

Proposed file transfer mechanisms that have been developed for immediate implementation on hosts at MIT.

113 Harlsem Apr 71 Network Activity Report: UCSB and RAND

Report on the network use and validity between UCSB's RJE and RJOR systems and RAND.

112 O'Sullivan Apr 71 User/Server Site Protocol Network HOST Questionnaire

A summary of the responses to the referenced questionnaire.

111 Crocker Mar 71 Pressure from the Chairman

Proposed scheduling for the implementation of NCPs and Telnets.

110 Winett Mar 71 Conventions for Using an IBM 2741 Terminal as a User Console for Access to Network Server Hosts

Telnet implementation and the 2741.

109 Winett Mar 71 Level III Server Protocol for the Lincoln Laboratory 360/67 Host

Telnet implementation and the 360/67.

108 Watson Mar 71 Attendance List at the Urbana NWG Meeting, 17-19 February 1971

Lists attendees at the NWG meeting held February 1971.

107 Bressler Mar 71 Output of the Host-Host Protocol Glitch Cleaning Committee

The second meeting of the Host-Host Protocol Glitch Cleaning committee.

106 O'Sullivan Mar 71 USER/SERVER Site Protocol Network Host Questionnaire

An attempt to gather information for creating the Telnet Protocol.

105 White Mar 71 Network Specification for Remote Job Entry and Remote Job Output Retrieval at UCSB

Describes the remote job entry service at UCSB.

104 Postel Feb 71 Link 191

General agreement to reserve a link for use in measurements. Therefore, Link 191 will be assigned for measurement use.

103 Kalin Feb 71 Implementation of Interrupt Keys

This paper discusses the problems and solutions that are simple to implement in the current protocol specifications that contain serious logical errors in the interrupt functions.

102. Crocker Feb 71 Output of the HOST/HOST Protocol Glitch Cleaning Committee

Numerous topics were discussed.

101 Watson Feb 71 Notes on the Network Working Group Meeting

Transcript of the Network Working Group Meeting, February 1970.

100 Karp Feb 71 Categorization and Guide to NWG/RFCs

Categorizes, identifies, and summarizes RFCS 1-100.

099 Karp Feb 71 Network Meeting

Announcement of the next meeting of the Network Working Group for 20 May 1970.

098 Meyer Feb 71 Logger Protocol Proposal

This "network logger protocol" is intended to specify how the existing logger of a network host is to interface to the network so as to permit a login from a console attached to another host.

097 Melvin Feb 71 A First Cut at a Proposed Telnet Protocol

This document was motivated by the need to set specifications for a protocol which would allow on-line access to the Network Information Center (NIC).

096 Watson Feb 71 An Interactive Network Experiment to Study Modes of Access to the Network Information Center

Outlines the framework for a simple interactive experiment to study modes of access to the Network Information Center (NIC).

095 Crocker Feb 71 Distribution of NWG/RFC's Through the NIC

Standards for establishing lines of communication of all of the sites with the Network Information Center, in regards to distribution of RFC's.

094 Harslem Feb 71 Some Thoughts on Network Graphics

Discussion of the initial reaction to RFC 86, whose purpose was to provide a basis for discussion and development of Network graphics.

093 McKenzie Jan 71 Initial Connection Protocol

A review of the Initial Connection Protocol (ICP), first described in RFC 66 and restated in RFC 80.

092 Never Issued.

091 Mealy Dec 70 A Proposed User-User Protocol

Discussion of UCLA's Campus Computing Network of services and implementation priorities.

090 Braden Jan 71 CCN as a Network Service Center

Discussion of UCLA's Campus Computing Network of services and implementation priorities.

089 Metcalfe Jan 71 Some Historic Moments in Networking

Noteworthy achievements for the MIT-Project MAC Dynamic Modeling/Computer Graphics PDP-6/10 System, while awaiting the completion of an interim network control program.

088 Braden Jan 71 NETRJS - A Third Level Protocol for Remote Job Entry

Description of NETRJS, which is the name for a message protocol and a set of control conventions which will allow users at remote Hosts to access the RJS remote batch subsystem of UCLA/CCN.

087 Vezza Jan 71 Topic for Discussion at the Next Network Working Group Meeting

Suggests Network Working Group discussion on topics germane to network graphics.

086 Crocker Jan 71 Proposal for a Network Standard Format for a Data Stream to Control Graphics Display

Proposes specifying the form of an output stream for the case that the output portion of the console (which is attached to a computer at the user's site) is a typical refresh display with point, vector, and character drawing capability.

085 Crocker Dec 70 Network Working Group Meeting

Announcement of regularly scheduled Network Working Group Meetings every three months.

084 North Dec 70 List of NWG/RFCs 1-80

Lists RFCs 1-80.

083 Anderson Dec 70 Language-Machine for Data Reconfiguration

Describes a syntax-driven interpreter that operates on a grammar which is an orderd set of replacement rules for the Form Machine.

082 Meyer Dec 70 Network Meeting Notes

A transcribed summary of the Fall 1970 network meeting notes.

081 Bouknight Dec 70 Request for Reference Information

Request for documents in the subject areas of data communications and communications theory.

080 Harslem Dec 70 Protocol and Data Formats

Proposes general solutions concerning Initial Connection Protocols, Pre-specificed Data Formats, and Adaptable Mechanisms.

079 Meyer Nov 70 Logger Protocol Error

078 Harslem Nov 70 NCP Status Report: UCSB/Rand

Conducted an excercise between UCSB console to/from RAND console validation of the respective NCPs.

077 Postel Nov 70 Network Meeting Report

Report on three Network Working Group meetings held during November 16, 17, and 18.

076 Bouknight Oct 70 Connection-by-Name: User-Oriented Protocol

Suggests a user level interface to network protocol where all user protocol is handled symbolically with system procedures making the translation into host-to-host protocol. Proposes general solutions.

075 Crocker Oct 70 Network Meeting

Announcement of the next scheduled meeting of the Network Working Group for 16 Nov 70.

074 White Oct 70 Specifications for Network Use of the UCSB On-Line System

Announcement of UCSB's On-Line System (OLS) availability to ARPA Network users.

073 Crocker Sep 70 Response to RFC 67

General agreement with proposed policy.

072 Bressler Sep 70 Proposed Moratorium on Changes to Network Protocol

Cites critical changes that could occur in hardware/software development efforts and advanced debugging if changes in the Network Protocol aren't kept in check.

071 Schipper Sep 70 Reallocation in Case of Input Error

Discussion of how to resynchronize flow control using a proposed protocol for the CCN-Host at UCLA.

070 Crocker Oct 70 A Note on Padding

Discussion of padding on a message.

069 Bhushan Sep 70 Distribution List Change for MIT.

Announcement of name change.

068 Elie Aug 70 Comments on Memory Allocation Control Commands (CEASE, ALL, GVB, RET) and RFNM

Provides a scheme for buffer allocation.

067 Crowther Undated Proposed Change to Host/IMP Spec to Eliminate Marking

Proposed change to eliminate marking, per Walden's comments.

066 Crocker Aug 70 3rd Level Ideas and Other Noise

Meeting notes from 12 Aug 70 between Crocker and representatives from BBN and MIT regarding the third level protocol.

065 Walden Aug 70 Comments on Host-Host Protocol Document Number 1 (Crocker, 3 August 70)

Critique and suggestions for improvement of the Host-Host Protocol document.

064 Elie Undated Getting Rid of Marking

Suggests simple modifications and solutions to the IMP-HOST interface which would be a better solution than marking.

063 Cerf Jul 70 Belated Network Meeting Report

Network meeting report of the Network Working Group from 8 May 70.

062 Walden Aug 70 A System for Interprocess Communication in a Resource Sharing Computer Network

Supercedes RFC 61.

061 Walden Jul 70 A Note on Interprocess Communication in a Resource Sharing Computer Network

A draft request for comments of a resource sharing study that may be of general interest to network participants.

060 Kalin Jul 70 A Simplified NCP Protocol

Definition of a new NCP Protocol that is simple enough to be implemented on a very small computer, yet can be extended for efficient operation on large timesharing machines.

059 Meyer Jun 70 Flow Control-Fixed Versus Demand Allocation

Discussion of the advantages and disadvantages of the method of flow control as described in RFC 54.

058 Skinner Jun 70 Logical Message Synchronization

A discussion on a question raised at the last network meeting regarding the question of logical and physical message distinctions.

057 Kraley Jun 70 Thoughts and Reflections on RFC 54

056 Belove Jun 70 Third Level Protocol

All explanations in this RFC are meant to describe functional characteristics rather than design.

055 Newkirk Jun 70 A Prototypical Implementation of the NCP

A prototypical specification in a prose format of what the NCP could look like.

054 Crocker Jun 70 An Official Protocol Proffering

Submission of the Official Protocol for comments and suggestions.

053 Crocker Jun 70 An Official Protocol Mechanism

Group discussion on rules for establishing and modifying an official Host-Host protocol.

052 Postel Jul 70 Updated Distribution List

Mailing list for distributing the RFCs.

051 Elie May 70 Proposal for a Network Interchange Language

A proposal to specify a high level programming language for computer networks, specifically the ARPA network.

050 Harslem Apr 70 Comments on the Meyer Proposal

General acceptance on RFC 46, plus comments on the seven issues raised in RFC 47.

049 Meyer Apr 70 Conversations with Steve Crocker (UCLA)

Discussion of telephone conversations relating to the Network Protocol, specifically regarding Meyer's proposal in RFC 46.

048 Postel Apr 70 A Possible Protocol Plateau

Reporting activities since the Network meeting of 17 March 1970.

047 Postel Apr 70 BBN's Comments on RFC 33

Comments from BBN regarding RFC 33 (New HOST-HOST Protocol).

046 Meyer Apr 70 ARPA Network Protocol Notes

Comments and suggestions from the NWG at Project MAC, based upon the protocol outlined in RFCs 33,36.

045 Postel Apr 70 New Protocol is Coming

Announcement of a new version of the Network Protocol.

044 Shoshani Apr 70 Comments on RFCs 33,36

General discussion and suggestions for refinements to the HOST-HOST Protocol.

043 Nemeth Mar 70 Proposed Meeting

An announcement of a meeting to discuss the Local Interaction Language system.

042 Ancona Mar 70 Message Data Types

A proposal that the first eight bits of a normal message be reserved for a message data type.

041 Melvin Mar 70 IMP/IMP Teletype Communication

Comments that transmitting IMP sites should use 24 hour time and include the time zone designation.

040 Harslem Mar 70 More Comments on the Forthcoming Protocol

Further elaborations on the errors, queries, and Host status that were mentioned in RFC 39.

039 Harslem Mar 70 Comments on Network Protocol (RFC 36)

More suggestions to be considered as additions to RFC 36 - Network Protocol.

038 Wolfe Mar 70 Comments on Network Protocol (RFC 36)

Continued discussion on the proposed Network Protocol.

037 Crocker Mar 70 Network Meeting Epilogues, etc.

Network Meeting notes from 17 March 1970.

036 Crocker Mar 70 Protocol Notes

A three part overview of the Network Protocol.

035 Crocker Mar 70 Network Meeting

Announcement of a network meeting: date, time, place, and proposed agenda.

034 English Feb 70 Some Brief Preliminary Notes on the ARC Clock

Describes the ARC Clock system.

033 Crocker Feb 70 New Host-Host Protocol

Revises RFC 11, and indicates numerous changes in the old protocol.

032 Cole Feb 70 Some Thoughts on SRI's Proposed Real Time Clock

References and comments on RFCs 28,29.

031 Bobrow Feb 68 Binary Message Forms in Computer Networks

Suggest alternative approaches and methods for describing messages.

030 Crocker Feb 70 Documentation Conventions

Revises the definition of style, content, form, and distribution of the Network Working Group's notes. Replaces RFCs 10,16,24,27.

029 Kahn Jan 70 Note in Response to Bill English's Request for Comments

Comments in response to English's question which was raised in RFC 28.

028 English Jan 70 Time Standards

Request for comments relative to Network time standards.

027 Crocker Dec 69 Documentation Conventions

Revises the definition of style, content, form, and distribution of the Network Working Group's notes. Replaces RFCs 10,16,24.

026 Never Issued.

025 Crocker Oct 69 No High Link Numbers

Suggests that no link number over 63 be used.

024 Crocker Nov 69 Documentation Conventions

Revises the definition of style, content, form, and distribution of the Network Working Group's notes. Replaces RFCs 10,16.

023 Gregg Oct 69 Transmission of Multiple Control Messages

Discusses how a network program at a site should be prepared to send or receive more than one control message in a single control communication.

022 Cerf Oct 69 Host-Host Control Message Formats

Reports on a new control message format which does not use the 7-bit ASCII character mode of transmission.

021 Cerf Oct 69 Report on Network Meeting

Attendance list and topics discussed.

020 Cerf Oct 69 ASCII Format for Network Interchange

Discusses the use of standard 7-bit ASCII embedded in an 8-bit byte whose high order bit is always 1.

019 Kreznar Oct 69 Two Protocol Suggestions to Reduce Congestion at Swap-Bound Nodes

Suggests alternatives in reducing congestion at swap-bound nodes.

018 Cerf Sep 69 Comments Re: Host-Host control link

Suggestions regarding the Host-Host control link.

017a Kahn Aug 69 Some Comments Re: HOST-IMP Protocol

Comments in response to Kreznar's questions which were raised in RFC 17.

017 Kreznar Aug 69 Some Questions Re: HOST-IMP Protocol

Queries and opinions regarding the HOST-IMP Protocol.

016 Crocker Aug 69 M.I.T.

Announcement that MIT is now to receive all Network Working Group memos.

015 Carr Sep 69 Network Subsystem for Time Sharing Hosts

Proposes a subsystem called "Telnet", which would be a shell program around the network system primitives, allowing a teletype or similar terminal at a remote host to function as a teletype at the serving host.

014 Never Issued.

013 Cerf Aug 69 Referring to RFC 11

Proposes a zero text length EOF (End-Of-File) message.

012 Wingfield Aug 69 IMP-HOST Interface Flow Diagrams

Flow diagrams that indicate the logical sequence of hardware operations which occur within the IMP-HOST interface.

011 Deloche Aug 69 Implementation of the Host-Host Software Procedures in GORDO

Discussion of Host-Host Procedures and GORDO as a time-sharing system that was implemented on a SDS Sigma 7.

010 Crocker Jul 69 Documentation Conventions

Revises the definition of style, content, form, and distribution of the Network Working Group's notes. Replaces RFC 3.

009 Deloche May 69 Host Software

Discusses the Host-Host Protocol, Network Service Calls, and Data Structures.

008 Deloche May 69 ARPA Network Functional Specifications

Discusses transmission features, functional software specifications, and the Link establishment procedure.

007 Deloche May 69 HOST-IMP Interface

Discusses Host-IMP interface issues.

006 Crocker Apr 69 Conversation with Bob Kahn

Conversations regarding code conversion in the IMP's, IMP-HOST communication, and HOST software.

005 Rulifson Jun 69 DEL

Details the machine independent language DEL (Decode-Encode Language).

004 Shapiro Mar 69 Network Timetable

Discusses installation, configuration, network checkout, and test messages run between SRI and UCLA.

003 Crocker Apr 69 Documentation Conventions

Establishes a definition of style, content, form, and distribution of the Network Working Group's notes (Obsoleted by RFC 10).

002 Duvall Apr 69 Links

Discusses various types of Links, including Control, Primary, and Auxilliary Links.

001 Crocker Apr 69 Host Software

Discusses the Host software and initial experiments on the ARPA Network.